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AMERICAN FORESTS

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Published monthly by

THE AMERICAN FORESTRY ASSOCIATION

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The American Forestry Association is a citizens' organization for the advancement of intelligent management and use of the country's forests and related resources of soil, water, wildlife and outdoor recreation.

Its educational activities seek to bring about a better appreciation and handling of these resources, whether publicly or privately owned, that they may contribute in the highest degree to the welfare of the nation and its people.

In addition to publication of two magazines—**AMERICAN FORESTS** and **CONSERVATION**, both designed to keep before the people of the country important conservation questions and issues, the Association carries on educational projects in various fields including forest fire prevention, reforestation, protection of fish and wildlife, upstream flood control, prevention of soil erosion, preservation of wilderness areas, establishment of national forests and parks, development of forestry by private endeavor, the teaching of conservation in the schools of the country, promotion of research in timber growing and use and expansion of markets for forest products.

The Association is independent. It has no connection with any federal or state governments. It is non-political and non-commercial. All its resources and income are devoted to the advancement of conservation. It has been so operated since its founding in 1875. All citizens interested in forestry and conservation are eligible for membership.

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BIG TREES

The American Forestry Association is sponsoring a national hunt for the discovery and preservation of the largest specimens of the different species of typical American trees. Locate, measure and nominate your candidate in this competition. ACT NOW to make known and save the largest specimens of America's trees. For further details, see page 412 of the September issue or send for special announcement of this Big Tree hunt. Mail your nominations with records and pictures to The American Forestry Association, 919 17th Street, Northwest, Washington, D. C.



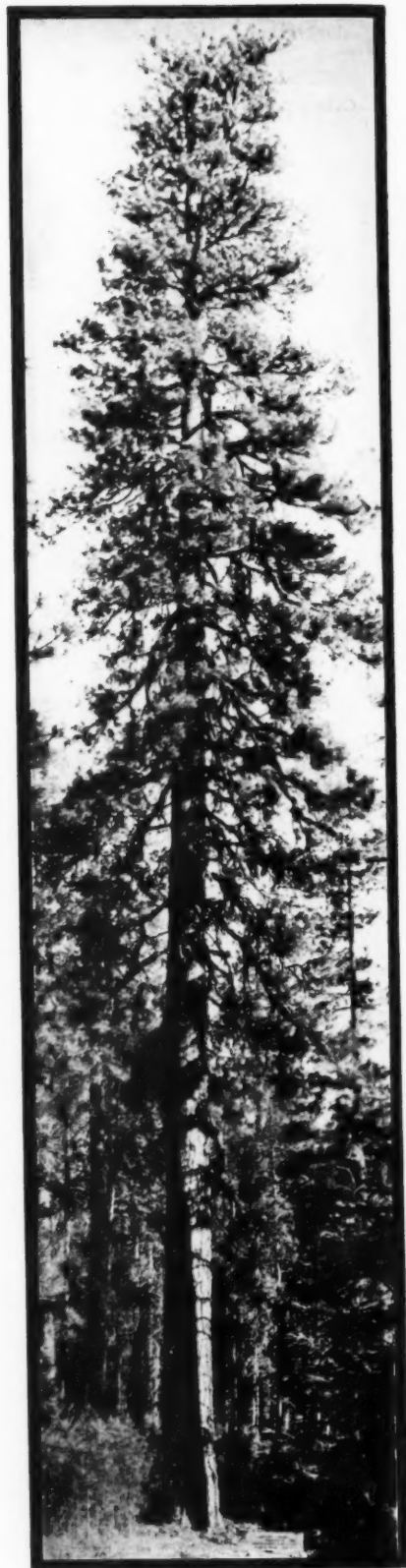
PONDEROSA PINE MONARCH

This great pine, challenging all comers, stands on the south slope of Mount Adams, four miles north of Trout Lake, Washington, in the Columbia National Forest. Its accessible location, within 200 feet of a forest road, makes it an attraction for many forest visitors.

The tree is beautifully symmetrical, is 84 inches in diameter four and a half feet above the ground, and is 175 feet tall.

It is nominated as the largest diameter ponderosa pine in the State of Washington—and perhaps in the nation—by Mr. K. P. Cecil, Forest Supervisor of the Columbia National Forest, who says that the Forest Service, foreseeing the need of preserving unusually large specimens of various tree species, has included this tree in a small reservation to keep it for future generations.

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WILLIAM STARKE ROSECRANS

MR. ROSECRANS, of California, has been elected 18th President of The American Forestry Association, following James G. K. McClure of North Carolina, our President for the past four years.

A native son of California, born in Los Angeles in 1889—Mr. Rosecrans is a direct descendant of General William S. Rosecrans of Civil War fame. Long prominently identified with conservation interests in southern California, his personal interest had its genesis in his concern with the soil and its maintenance. Having studied the results of soil

OUR NEW PRESIDENT

erosion both in this country and abroad, in its devastating effects on agriculture and the standards of living and, in some instances, its destruction of civilization itself, he has devoted himself to the work of organizing control and right use of the rich natural resources with which his State is blessed.

Notably, the serious floods of 1914 and 1916 impressed him with the need for immediate action and he helped organize and became President of the Harbor District Chambers of Commerce, with flood control as its chief objective. This organization is still the major group of its kind in southern California. Then, the great fires in the San Gabriel Mountains in 1923, which caused heavy loss and suffering, pointed to the necessity for better organization along these lines, and Mr. Rosecrans helped create the Joint Committee on Fire Prevention and Suppression, around which later was built the Conservation Association of Southern California. In 1925, as Vice President of the California Farm Bureau Federation and chairman of its Conservation Committee, a state-wide water policy for California was developed. His enthusiastic work in helping solve these highly important economic problems led to his appointment in 1926 as chairman of a new committee of the Los Angeles Chamber of Commerce known as the Flood Control and Conservation Committee, which work he has headed practically for the last fourteen years. The scope of this work covers a wide field and comprises many projects in conservation and land use all over the State and in neighboring states as well. Serving also the Conservation Association of Southern California as Vice President and then President for the last six years, Mr. Rosecrans has carried on his outstanding work for conservation, and now the national field is to benefit by experience and leadership through his accession to the presidency of The American Forestry Association.

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ON JANUARY 1, W. S. Rosecrans of Los Angeles became the eighteenth President of The American Forestry Association. Elected by letter ballot during December by an almost unanimous vote of the members, he is the second citizen of California ever to head the Association. The other "native son" was William Alvord, of San Francisco, whose

vision and civic leadership as private citizen, park commissioner and mayor of the city during the wild days of the 1870's contributed so largely to the creation of beautiful Golden Gate Park. Mr. Alvord served the Association as President during 1890 and 1891. Those are now historic years in the conservation calendar, for it was in 1891 that the Association's leadership helped to bring about passage by Congress of the initial forest reserve act from which has developed the present system of national forests.

Today no state in the union is more conservation-minded than California and no citizen of that state is more so than Mr. Rosecrans. He has lived in a region where the conservation of forest, soil and water touches more closely and more vitally the lives of people and whole communities than probably anywhere else in the United States. To the men and women of southern California conservation is not an abstract cause; it is a definite, purposeful treatment of the soil and its living resources for the protection and betterment of human life. In this environment, Mr. Rosecrans has come to see and feel conservation in all its manifold human aspects and as a business man and civic leader of long standing, he will bring to the presidency of the Association a breadth of vision and a practicality of action of great public value. To him AMERICAN FORESTS in behalf of the Association extends a hearty welcome and a pledge of wholehearted cooperation.

By happy coincidence Mr. Rosecrans' home city of Los Angeles was selected last fall for the 1941 convention of the Association. The dates of the meeting are April 15, 16 and 17, and the convention hotel is Los Angeles' famous Ambassador. On page 58 of this issue Mr. Rosecrans sketches some of the more interesting things to do and see in and around Los Angeles. In the March issue, he will describe opportunities for technical and scientific observation and study.

Past presidents of the Association have included many eminent and lovable men. To mention a few, there were in the early years Judge Warren Higley of Ohio, leader of the famous American Forestry Congress in Cincinnati in 1882, J. Sterling Morton of Nebraska, founder of Arbor Day, "Tama" James Wilson of Iowa, long Secretary of Agriculture, Robert P. Bass, one-time governor of New Hampshire. In later years Charles Lathrop Pack of New Jersey, who carried the Association through the hard years of the World War, George D. Pratt, Conservation Commissioner of New York, Henry S. Graves, former Dean of the Yale Forest School and one-time Chief Forester of the United States, and lastly James G. K. McClure, who has just retired after four years of notable service. Better known to his friends and co-workers as "Jim," Mr. McClure is a leader in whatever he undertakes and a happy and lovable one. He has made a host of friends and supporters for the Association and he has strengthened and broadened its influence as few Presidents before him have done. Through his four years he never missed a meeting of the Board and his clear-headed and sympathetic consideration of every problem and every situation has been an inspirational force that has permanently enriched the work of the Association. All too few people know about the work of Mr. McClure as President of the Farmers Federation—organized more than twenty years ago—and what it has done to better the lives and the economy of the mountain people of western North Carolina. The story ought to be written because it is an inspiring saga of human welfare, and the best possible commentary upon the character, leadership and humanitarianism of "Jim" McClure. Great as is the loss of his leadership, his retirement as President of the Association because of the burden of his own work is in part atoned for by his willingness to continue to serve the Association as a Director.

Orin Rusten
Editor.



"THE END OF THE TRAIL"

THIS IS ONE OF THE FIRST AUTHENTIC PICTURES OF A MINNESOTA CARIBOU, ON THE BIG BOG NORTH OF RED LAKE, AND THE PHOTOGRAPH WAS MADE BY THE LATE ROLAND REED, FAMOUS PHOTOGRAPHER OF INDIANS. IT IS REPRODUCED THROUGH THE COURTESY OF R. F. WILLIAMS, THE COPYRIGHT OWNER

THE FIGHT FOR THE WOODLAND CARIBOU

By W. T. COX

WE ALL KNOW how the buffalo disappeared from the plains. We know also what happened to the passenger pigeon and the heath hen. But until recently few were aware that a similar fate threatened one of the finest species of big game in the United States — the woodland caribou, *Rangifer caribou sylvestris*. Indeed, it had almost reached the vanishing point before anything was done to save it.

When the white settlers came to Minnesota the state was a near approach to the "happy hunting ground" of Chippewa and Sioux and Cree. Deer swarmed in the southeastern counties, buffalo and antelope roamed the prairies, elk ranged in the "big woods" and along the border line of prairie and forest. Through the timbered swamps moose wandered, and over the more open, bog country roamed the woodland caribou.

The sparse Indian population with inferior weapons was unable to take any considerable toll of the big game herds. But when the white hunter arrived there was a rapid change. Some species like the buffalo and antelope quickly disappeared from the state. By 1900 the elk were practically gone and the caribou were found in only a few locations and in very small numbers.

In 1913, after having made a snowshoe and dog-team trip through the country north of Red Lake, it occurred to me that we should make an effort to perpetuate the elk and caribou as part of the native fauna of the state. So I asked the legislature to appropriate \$5,000 with which to obtain elk from the Rocky Mountains and to build a 700-acre enclosure in Itasca Park and Forest where they might be given careful protection. The money was provided, the fence built, and the elk obtained. They gradually increased and are now well established in a number of locations in northern Minnesota.

It was on that snowshoe trip that I first saw the Red Lake band of caribou. There were then only thirty-three of the animals and they were feeding in an open swamp, or muskeg, where occasional clumps of black spruce and tamarack gave partial protection. There had been a great reduction in this band during the preceding years if one may judge from reports, seemingly authentic, telling of the numbers taken out by the Red Lake Indians and by professional hunters who sold the meat in the Red River Valley.

The bands in Aitkin, Cass, Itasca, St. Louis, Lake, and Cook counties had already disappeared except for an occasional individual around Vermillion Lake and in Cook County. Even these stragglers were gone soon afterward.

For a number of years forest rangers and game wardens attempted to protect the Red Lake band of caribou, but with little success. In 1924, while making an airplane reconnaissance of the timber and wildlife resources of the region between Lake Winnipeg and Hudson Bay, I saw a good deal of the Canadian caribou country. In discussing the wildlife of that territory with Dr. E. W. Nelson, then chief of the Biological Survey, I suggested that woodland caribou for replenishing the Red Lake band in Minnesota be obtained in the Lake Winnipeg district, where they were fairly abundant. Dr. Nelson expressed a keen interest in the matter but shortage of funds at the time made it impossible to undertake the capture and importation of the animals.

In 1932, when I was state commissioner of conservation in Minnesota, I issued an order establishing the Red Lake Wildlife Refuge of 480,000 acres with the definite objective of preserving the caribou and other big game in that district. Moose, deer and beaver increased as a result of better protection, but the caribou continued to decline. By the winter of 1934-35 only six remained.

It is of interest to consider some of the factors tending to reduce the numbers of these fine animals. I have mentioned the inroads made by hunters, which may or



Warden Langer

A valiant contender in the struggle for survival—a baby weighing ten pounds, and only one and one-half hours old

may not have been the chief cause of the herd's decline. The great swamp region was the scene of extensive drainage from 1909 to 1922. Many hundreds of miles of ditches were dug and the wet swamps converted into vast areas of highly inflammable peat lands covered with grass and brush interspersed with cedar and spruce forest. Today Minnesota has 7,000,000 acres of peat. Extensive and devastating fires have swept through portions of these lands year after year despite strong efforts to control them. Many moose and deer and undoubtedly some of the caribou perished in these fires.

The ditches, where they crossed actual muskeg areas, were veritable traps for big game. They were bottomless and their banks were steep and high. Rangers often found animals dead in them. Moreover, the drainage of the country made conditions difficult for the young caribou. Before the drainage era the cows could find little islands far out in the swamp where they could drop their calves comparatively free from molestation by wolves. After the swamps were drained, the wolves could pick up the calves readily without having to swim or wade to the islands.

Disease and parasites may also have been factors in lessening the numbers of caribou. At any rate, moose in the same territory have suffered considerable losses from these causes.

Maine and Minnesota were the original woodland caribou states, but these animals are believed to have disappeared from Maine twenty years ago and only three of the native animals remain in Minnesota. In both Canada and Newfoundland, until recently, woodland caribou were fairly plentiful. There are still a good many in Newfoundland, but across Canada the number has rapidly declined. Game guardians of the provinces indicate that New Brunswick no longer has caribou. The animal is rare in Quebec and Ontario. Compared with the numbers existing a few years ago, only a few remain in Manitoba. Northern Saskatchewan and Alberta are the only Canadian provinces where fair numbers persist. Of course, there are large numbers of the barren-ground species in the country east of Lake Athabaska and Great Slave Lake. There are also numbers of mountain caribou of several kinds in British Columbia and Alaska. In 1908, a small band of mountain caribou ranged north of Priest Lake, Idaho, and a few of these still occasionally enter the northwestern corner of Idaho and the northeastern corner of Washington.

With reference to the rapid decline in the numbers of woodland caribou in Canada, it is of interest to note that Indian reservations in that country are small and numerous. Every five or ten miles through the forest country one finds a few Indian families occupying a tiny "reservation." This system of scattering the Indians works out well in the matter of harvesting the fur crop, but is anything but favorable to the caribou since these animals in so many cases are within short sledding distance of the Indian habitations. Being easier to get than moose and about as palatable, the caribou is hunted as a source of winter meat.

The Indians, however, are by no means the only threat to the Canadian woodland caribou. Recent years have seen widespread prospecting and mining activity in the wild portions of Manitoba, Ontario and Quebec, and as might be expected, large numbers of caribou have furnished food for the prospectors' camps. For 2,000 miles across the continent, from New Brunswick to Saskatchewan, the future looks gloomy indeed for this splendid animal. Only through intelligent and persistent effort will it be possible to save the woodland caribou from extermination. Sanctuaries must be established in suitable

places; thorough protection will need to be provided, as will intelligent environmental control. The caribou is "choosy" in its food habits; it needs a variety of browse and moss not found everywhere in the forest country.

With the initiation of the Beltrami Resettlement Project, embracing 800,000 acres, and which includes the Red Lake Wildlife Refuge, it seemed to me that an unusual opportunity was presented to do something worthwhile for the caribou. The removal of the scattered and stranded settlers from this territory and their relocation on better lands would reduce the losses to big game caused by poaching or illegal killing. The development of the area as part of the relief work program, we felt, should include as a major objective the damming of hundreds of miles of useless ditches and the transformation of a burned out swamp country into a saturated one safer from fire and highly productive of wildlife — the soundest land use for this particular territory. Effective patrol would be maintained. In this way fires and poaching could be controlled and a favorable environment created for big game, beavers, and wildfowl.

The development plan, suggested by the writer, and formulated and adopted with the approval of the state, has been followed and the work is approaching completion. The results hoped for are rapidly coming about. The factors believed to have been largely responsible for the decline of the caribou, and moose also, have been pretty well controlled and, with the completion of the program, conditions should be favorable for the increase of all big game. In addition, the largest combined wildfowl nesting area, as well as the best beaver breeding area, in the United States has been created and is now functioning with remarkable success.

Even in this ideal refuge area, however, the prospect for perpetuating our native woodland caribou was far from good since their number in the winter of 1936-37 not only was down to three animals but these appeared to be all cows. The dominion and provincial governments of Canada were therefore sounded out with a view to obtaining some new breeding stock.

Woodland caribou have habits which render difficult their adaptation to captivity or intensive management. Also, their foods are peculiar and differ widely from those of other woodland animals. Previous attempts by zoological gardens and parks to keep them long in an artificial environment had been costly and unsuccessful. So, in anticipation of stocking the Beltrami Project with woodland caribou, Jack Manweiler, game manager on the project, was asked to make a study of the habits and food requirements of the few native caribou in the area. The information he obtained proved to be valuable.

Let us now consider what had to be done to obtain stock from Canada to replenish the little band remaining in our country. I found that the only province where conditions seemed to justify the taking of caribou for stocking purposes and where a permit to get them could be obtained was Saskatchewan. That province authorized us to take ten animals. The United States Department of Agriculture agreed to provide the money to pay for the capture and transportation; the State of Minnesota and the Biological Survey cooperated in certain essential particulars. We finally started field operations about 100 miles north of Prince Albert, Saskatchewan.

Our good friend, Ralph Parsons, fur trade commissioner for the Hudson's Bay Company at Winnipeg, had generously consented to have the company act as our agent and help to interest the Indians at Montreal Lake Post in a prolonged caribou hunt. This was a real favor. The local Indians were the logical ones to catch the animals; but thirty Indians hunting caribou for two months

instead of trapping fur meant a considerable loss to the company.

Because of the preparatory work he had carried out in connection with the native Minnesota caribou, Mr. Manweiler was detailed to inspect and accept the animals to be obtained in Canada and as far as possible supervise their capture. He left Minnesota in March, and upon his arrival at the Hudson's Bay Company post on Montreal Lake, he met with the Indian Chief, his counselors, and those trappers who were known to be reliable and induced them to take up trapping operations. This was a difficult matter since the trappers and Indians were of the opinion that adult caribou could not be taken in the winter without injury. Also provision had to be made for grubstakes, since the Indians could not begin operations until food, rope, and other essentials were supplied.

The first trapping party established headquarters on the north shore of Montreal Lake about thirty-five miles from the post. During the first week no evidence of caribou was found. Their disappearance was assumed to be due to extensive forest fires which had occurred the preceding summer. Additional explanations offered were that timber wolves tended to drive them from the country, and that the mild winter was not conducive to group migration and concentration.

This first failure was disheartening and increased the difficulty of inducing trapping parties to take the field. However, when more territory was scouted and fresh signs discovered, additional trappers were interested and equipped and numerous attempts were made to capture the animals. Two caribou were caught in snares, only to escape, but this contact with the animals created a spirit of optimism which, with the assistance of the post factor, was maintained by the Indians to the end of operations.

The most successful method employed to capture the mature ani-



Warden Langer

A two-year old woodland caribou mother with her newly-born calf on the Red Lake Wildlife Refuge in Minnesota

mals in the winter was to snare them with rope sufficiently strong to hold, yet so constructed that they would not strangle themselves. Several snares were set using the ordinary clothesline type of rope, which was saturated with mucilage. The first animal caught developed an unaccountable fondness for mucilage and chewed the rope until free.

The snares were set over trails most used by caribou and were fastened to flexible green tamarack or aspen saplings. If they were not carefully camouflaged and the smell of the rope lessened by boiling in a mixture of spruce and cedar boughs and (Continuing on page 93)



Minnesota Tourist Bureau

Members of the little herd of caribou brought from Saskatchewan to Red Lake in 1938 to augment the remnant then existing in the United States

ON TO LOS ANGELES!

Southern California Prepares to Welcome Members and Friends of The American Forestry Association Meeting there April 15, 16 and 17

By W. S. ROSECRANS — PRESIDENT, THE AMERICAN FORESTRY ASSOCIATION



FOR THE first time in its history, the annual convention of The American Forestry Association will be held this year west of the Mississippi River—at Los Angeles, California, on April 15, 16 and 17.

We of the West are highly complimented. We hope to deserve the compliment. When you return to your respective homes, we believe you will say: "That was the finest convention, in every respect, we ever had." That

Above — Los Angeles — the tall tower of the city hall rises above the many beautiful buildings of the Civic Center. In the oval is seen the Ambassador Hotel — where the convention will be held and, below, is a stretch of the far-flung Roosevelt Highway, skirting the Pacific Ocean and passing through the beach cities of Los Angeles County

wish is expressed *not* to deprecate any preceding convention but because our every meeting should have as its goal, constant betterment.

There is much to see and do in Los Angeles and nearby communities. Because we do have these interesting places to go and see, the committee having entertainment in hand will do everything possible to make your stay here one long to be remembered. Of course, we recognize that most of you have been here before and that many already have seen and heard some of the highly desirable features which set Los Angeles and its environs apart from the rest of the nation.

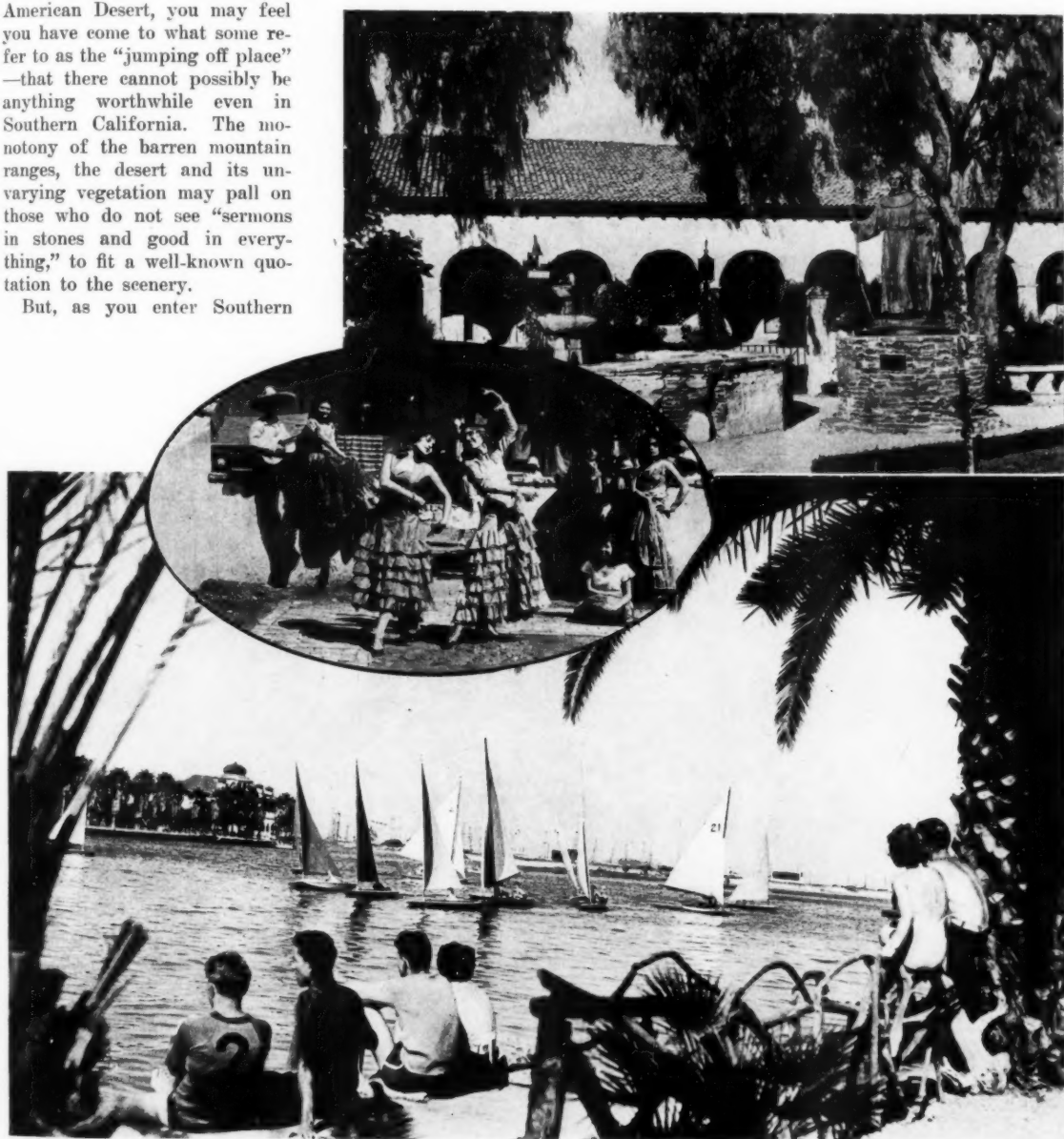
But there will be some who have not been here and it is to them I am addressing this article.

As you leave or pass through the populous and highly developed Middle West, either by train or by car, and enter the area of the Great American Desert, you may feel you have come to what some refer to as the "jumping off place"—that there cannot possibly be anything worthwhile even in Southern California. The monotony of the barren mountain ranges, the desert and its unvarying vegetation may pall on those who do not see "sermons in stones and good in everything," to fit a well-known quotation to the scenery.

But, as you enter Southern

California through any one of the numerous passes used by the transcontinental highways, and perhaps have an occasional view of the man-made river that brings water from the Colorado River to Los Angeles, you will wonder at the human intelligence that could conceive such an undertaking and build it. In a comparatively few more miles you will see the results of irrigation, combined with God-given sunshine. The verdant citrus, avocado and walnut groves and well arranged farms take the place of the desert. Modern cities with wide streets and the last word in architectural home development will tell you that you have entered Southern California.

The sudden change, in a comparatively few miles, from a barren desert atmosphere, with little or no vegetation, to the lush agricultural development that characterizes the productive areas of Southern California, never fails



Above — San Fernando Mission — one of the twenty-one ancient Spanish missions established in California between 1769 and 1873. In the oval — dancing girls in famed Olvera Street, where the beauty and atmosphere of Old Mexico — sunshine and laughter — may still be enjoyed. Below — lovely Los Almitos Bay — full of tiny skimmers

to evoke expressions of wonder from the visitor, particularly if this is his or her first visit. Without conceit it might be said in passing that Los Angeles County is the number one farm county in the United States—that is, that the value of its farm products, approximately \$76,000,000 annually, is higher than that of any other of the 4,000 odd counties in the country.

Almost the first thing the new visitor to the orange belt district wants to do, especially if he is traveling by automobile, is to pick a ripe orange from one of the thousands of trees that, within a few feet, parallel the highways. The frequent warning signs act as a deterrent but, if one stops at one of the many service stations situated on the edge of an orange grove arrangements can usually be made to gratify the desire to pick an orange—and perfect the atmosphere for the necessary photographic evidence.

The far-famed "Los Angeles City Limits" signs are not encountered, approaching from the east, until one is well into what otherwise appears to be the city. On its fringe Los Angeles has many other incorporated cities, divided from it only by a street.

In all the populous sections the newcomer will be impressed by the newness of the architecture. Even near the trancontinental highways, what a few years ago were orange groves or barley fields now hold thousands of homes. It is an interesting fact that in Los Angeles County twelve per cent, or one-eighth, of *all* the homes built in the country under FHA have been erected the last three years. And that is the reason for the modern architecture.

The train traveler arriving in Los Angeles will appreciate the beauty of the new union station, now only two years old and the last word in Spanish architecture combined with modern conveniences for the traveling public. We are justly proud of this, perhaps a revival of the days when all community life centered around the "depot" and the arrival and departure of the trains was the event of the day.

It matters little to what structure of society the visitor to Los Angeles belongs he, and she, have more than a passing interest in what everyone refers to as "the movies."

Every visitor, of low and high degree, wants to see a picture in production and, if possible, view some star at work. The advent of the talking picture and its microphones almost spelled the doom of the visitor to pictures in the making. An accidental unscheduled sound, as many directors will ruefully testify, has necessitated many expensive retakes.

But I think I can assure members of the Association and their guests that every effort will be made to see that they are given the opportunity to see a motion picture being made and that trips will be arranged to view the expensive sets where every section of the globe is factually reproduced. A Shanghai street, in detail, will be a few feet from Picadilly Square which, in turn, will be a stone's throw from the docks of Rio. Stage "detectives" and "police" may be observed off the set fraternizing with "Public Enemies" who, in a few minutes and several hundred feet of film, may be engaged in mortal combat.

Almost equal in popular interest with the "movies" are the broadcasting stations where many of the popular nation-wide programs are staged. Two of the three major national circuits have built large studios within a block of each other and there the stars of the screen increase their popularity by appearances in radio skits heard by millions over the world. They are staged in small theaters, admission to which is by invitation; but

arrangements are already under way by which members of the Association, in attendance at the convention, may be enabled to attend one or more of these broadcast programs.

For those who wish to view the more serious, but no less interesting, spots of Los Angeles and the adjacent communities, there is the internationally famous Huntington Art Gallery and Library, where are housed some of the world's most famous paintings and books and papers. The late Henry Huntington dedicated his priceless collection to the benefit of the public but reservations must be made in advance by telephone for a visit, twenty minutes' motor car ride from downtown Los Angeles.

The University of California at Los Angeles, a branch of the state university, with its neighboring, and modernistic, Westwood Village; California Institute of Technology, whose faculty has won more Nobel prizes than any one institution in the world; the University of Southern California, whose campus is in the heart of the residential section of Los Angeles; a visit to famed Olvera Street, a bit of old Mexico where one may obtain real Spanish dishes; the two Chinese sections and a host of other interesting places to visit are only a few minutes from the visitor's temporary abode.

No trip to Los Angeles should be made, more particularly if the visitor is from an inland city, without a drive around the beaches. Malibu Beach, better known perhaps than the others because many of the film luminaries have their homes there, is an hour's drive up the coast north from Santa Monica. South of Santa Monica lie Venice and Ocean Park, and Manhattan, and Hermosa and Redondo, from where the highway passes through the Palos Verdes Estates, owned and developed by the late Frank Vanderlip.

A few minutes beyond are the twin cities of San Pedro and Wilmington, the port cities for Los Angeles, where huge ocean liners normally carry cargo to every port in the world. Catalina Island is twenty miles offshore and a day-long trip, leaving by boat from Wilmington, to what has been called "the magic isle," annually lures thousands.

You may be interested in the industrial development of Los Angeles County—you know this county is the airplane manufacturing capital of the country—and the tire factories and the automobile assembly plants and a host of other industries which have brought Los Angeles to the forefront as a manufacturing center. Visitors are welcome to any of them but, in the plane factories, only the departments engaged in the manufacture of commercial planes are open to the public.

And you probably like to eat! There is no place in America that has a wider variety of interesting places in which to dine than Los Angeles. Here can be found a bit of almost any nationality—including the Scandinavian—reflected in places whose cuisine and atmosphere form a bit of color long remembered. Only in New York are there night clubs whose charm and variety of entertainment and food are on a par with those in Los Angeles.

Whatever you wish to see—and do—in Los Angeles that is distinct to this community will be found to be intensely interesting. The formal sessions of the Association will bring us messages of tremendous value to those who have the conservation of our natural resources at heart. But everyone who comes for the convention should round out his visit by "taking in" one or more of the many places which not only have an educational but entertainment value.

We will do our best to make your stay here pleasant.

WONDER WORLD IN A WOODPILE

By L. F. LIVINGSTON

A BLOCK of wood, analyzed chemically, contains a quantity of ash, resins, extracts, lignin and other miscellaneous substances. These comprise, together, about fifty per cent of its volume. The other half is made up of a fibrous "honeycomb" common to all plants, called cellulose. Cellulose is one of the most abundant materials in nature's storehouse. Its use in the form of paper and textiles goes back many centuries. Its modern development, however, springs from its utilization as a raw material for the chemical industry. The wide diversity of uses to which it has been turned by laboratory research is estimated at more than 10,000.

A chemist regards a tree as a chemical factory with many of the functions and duties of any factory. Essentially, its business is to trap carbon, in the form of carbon dioxide, from the air. This it brings into combination with the elements hydrogen and oxygen, to form cellulose. Chemically, then, cellulose is designated in the cryptic symbolism of the laboratory as $(C_6H_{10}O_5)_X$. The trailing X indicates a real unknown quantity. The complex molecule of cellulose is not yet entirely understood, just as the physical structure and chemical composition of wood are still controversial. Scientists have been attempting for years to unravel the tangled skein, and their success to date has carved out new and strange careers for the trees of the forest.

Enough has been learned to provide cellulose with steady employment in many fields, somehow touching every phase of life. The photographs shown here are representative of the uses which annually claim some 300,000,000 pounds of wood pulp (chiefly from trees of spruce, fir and hemlock) and 185,000,000 pounds of cotton linters.

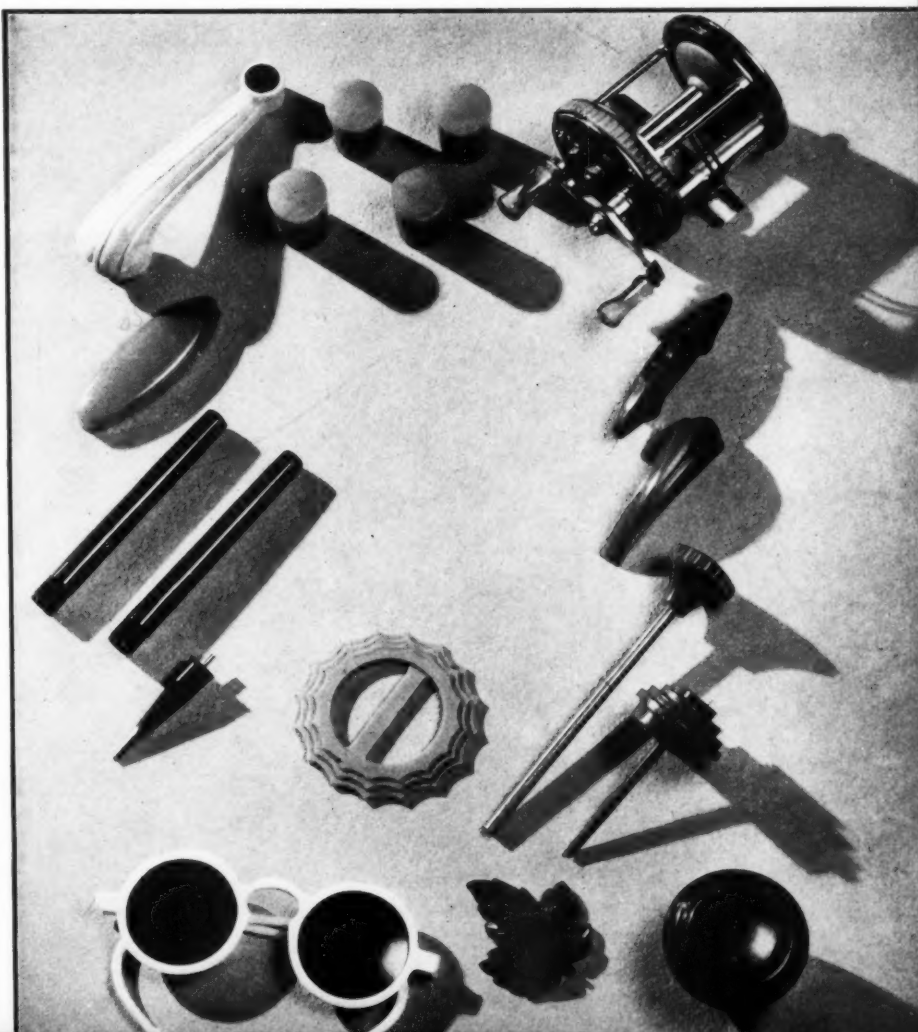
High grade cellulose can be produced from any number of other plants—sugar cane bagasse, cornstalks,

bamboo, flax and hemp. To date, none of them is able to compete economically with wood. The question of source is no longer a problem of the laboratory, but of the counting house. Assuming that cellulose of comparable grade is considered, cost is the deciding factor.

Wood's debut as a large contributor to the chemical industry came in 1921 when it was introduced in rayon manufacture. Later it was adapted to "Cellophane" cellulose film by the Du Pont Company. Today wood cellulose leads that of cotton linters in the Du Pont operations.

Cellulose, because of its chemical, colloidal and physical structure, lends itself to adaptation in a multitude of ways. It may be combined with many acids other than the nitric and acetic acids now chiefly used. It may be etherified with many groups to give an entirely new series of cellulose derivatives. It is likely that some of these new products will form the basis for industries of the future, to which chemical research is the key which will open the gate.

The magic wand of the chemist waves over the humble block of wood, to materialize an endless variety of things. These are all molded from "Plastacel" — a cellulose acetate plastic

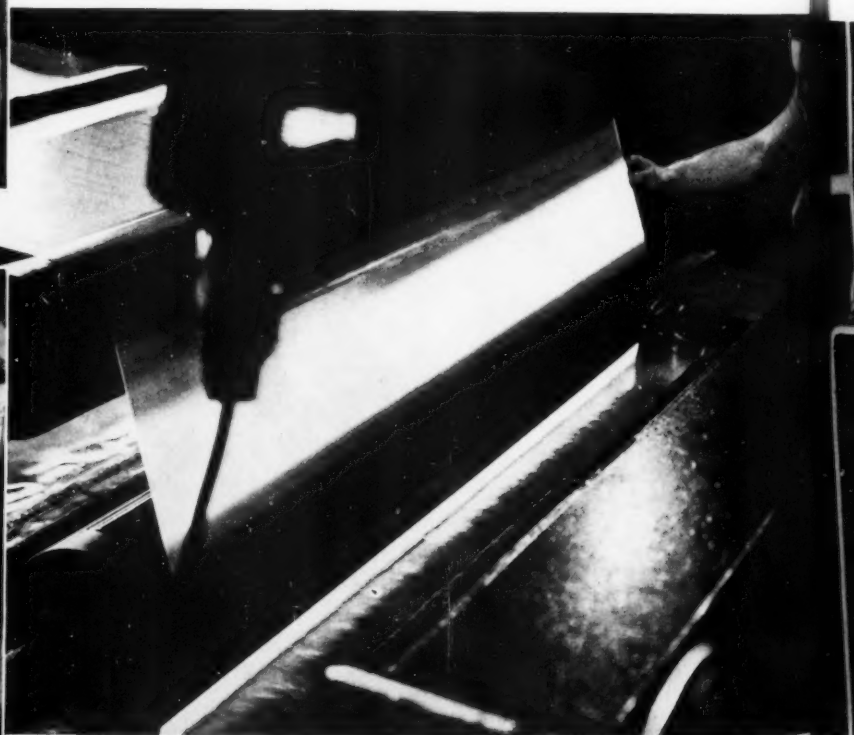


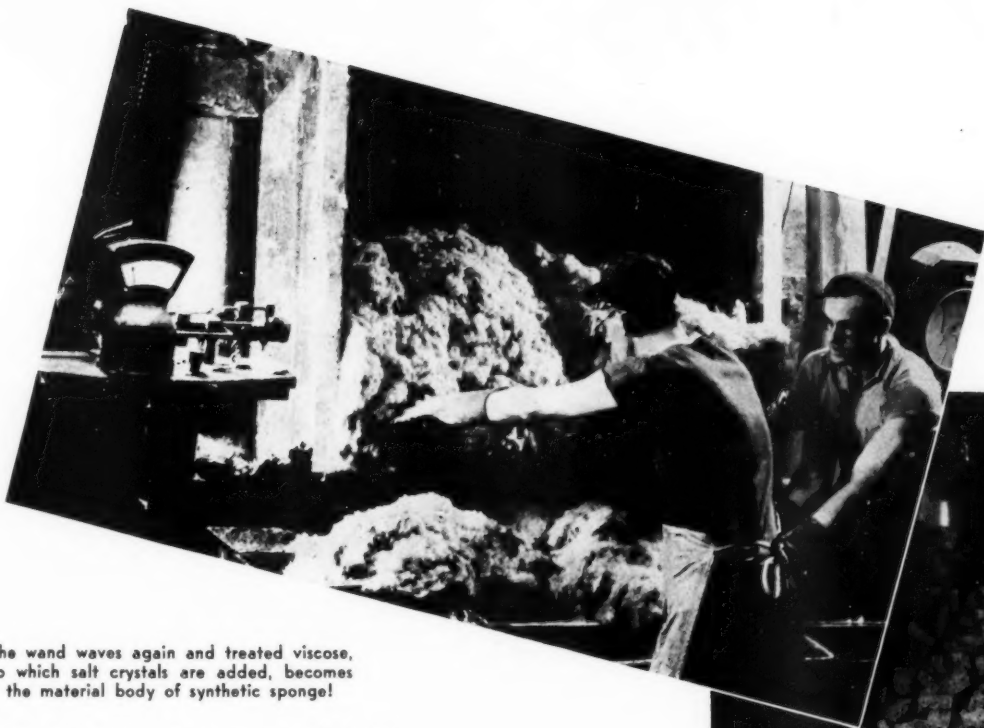


Pine stumps, on their way to the turpentine still to be reduced to the material from which synthetic camphor is made

Left — camphor which never saw a camphor tree — now made by millions of pounds annually from the turpentine from Southern pines

Lower left—treating woodpulp with caustic soda—first step in making Cellophane. Below—actually making Cellophane—cellulose film. A sheet of "Cellophane" is seen leaving the coagulating bath

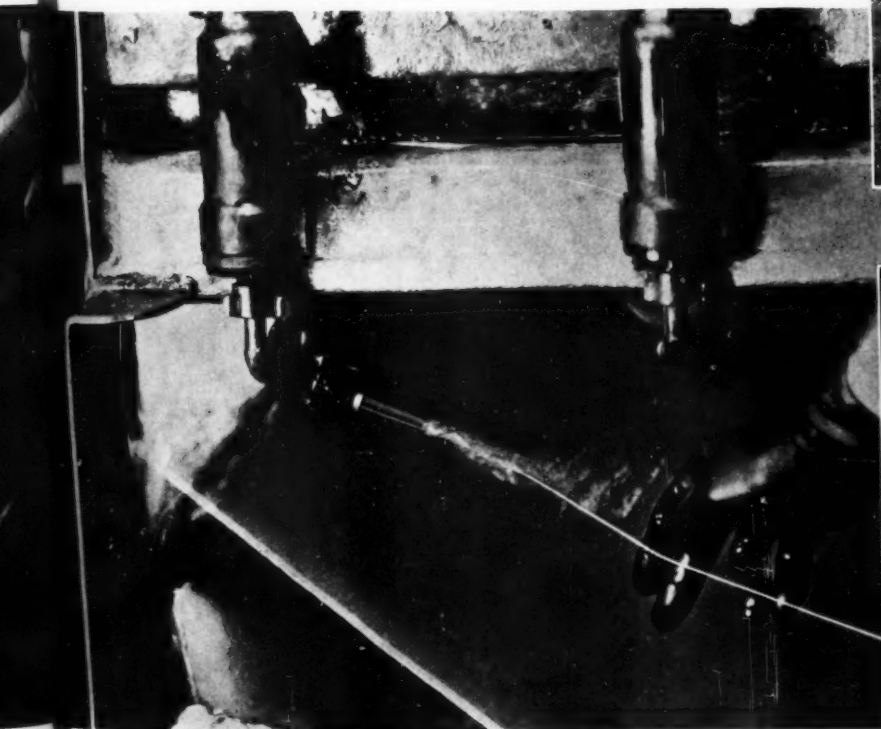




The wand waves again and treated viscose, to which salt crystals are added, becomes the material body of synthetic sponge!

At the right is shown final inspection of cellulose, man-made sponges—no need for divers here!

Below — liquid viscose is chemically changed here into shining rayon filaments — threads from which milady's gown is woven today. Rayon has transformed the world of fashion fabrics. Millions of dresses are made of it and it is used in gowns of the highest style



MIRACLE MAKER OF THE RANGELAND

By M. E. MUSGRAVE

YOU WOULD never look twice at the shy, gray-haired little man if you were seeking a maker of miracles — but eighty-one year old John Timothy Page is just that. On his half section of Arizona rangeland, twenty miles north of Tucson, this disciple of the land, with only a shovel and a spading fork, has, in the short span of seventeen years, wrought such a miracle in restoring range productivity that the world, represented by a state university and several federal agencies, is beating a path to his door.

As may be expected, John Timothy Page doesn't believe in miracles. "Anybody can do the same thing if he has a piece of land — and doesn't mind hard work," is the way he looks at it. To him, there is nothing unusual in the fact that a man past sixty should set out with a shovel and a spading fork to rehabilitate a piece of stripped, eroded and worn-out land, to make an oasis in a near-desert. Nor is he awed by the fact that what he has accomplished is of such importance to the scientist that the University of Arizona has purchased his "piece of land" and,

with the cooperation of several federal agencies, will operate it as a demonstration area in plant succession in the rehabilitation of rangeland. John Timothy Page sees in this only a means of continuing the work his aged hands can no longer carry on.

The story of how John Timothy Page brought 320 acres



Gail Munson



of Arizona rangeland back to productivity, of how this aged man, with only a shovel and a spading fork, made miles of furrows and ditches over his place, of how with only the native earth, brush and stones he built small dams to hold or to divert flood waters, building them not once or twice but over and over until they held — this is a saga of the range. It would have been so easy to become a Joad! Why try to wring a living from worn-out acres? Why not choose the easier way? He might justifiably have asked for and received the "relief"

John Timothy Page, — eighty-one year old disciple of the land — in front of his humble home. Above — the drive leading to the Page place, where a miracle has been wrought in the rehabilitation of rangeland

designed for just such cases as his. But he preferred independence at the price of back-breaking work. In his story lies the germ of salvation for thousands of square miles of the nation's rangeland as well as for the peoples who inhabit them. For what John Timothy Page has done they, too, can do, and the sooner they begin, the easier will be the task.

Two other things he had — a wife who was willing to stand with him shoulder to shoulder, and a deep reverence for the land. "A piece of land is a loan from God," he said simply. "It is not to be abused." This is his creed.

"I was working for a street car company back in Kansas," he told me, "but every turn of the wheels made me more discontented. I'd been raised on a farm, and the more I pounded up and down the city streets the more I was determined to have a place of my own. At last it got so bad I couldn't stand it any longer. I decided to homestead in Arizona."

He laughed. "Things had changed when I finally got here. There wasn't any land worth taking to be had that way, so I began looking around for a farm or a small ranch that I could buy. At last I found this 320 acres.

"It wasn't much to look at. It was entirely bare in places, and about the only things that grew here were cactus, snake-weed and rabbit brush — things that stock wouldn't eat. There was a little feather-grass (*Andropogon*), and here and there a few patches of other perennials. Harvester ants and kangaroo rats had just about taken over the place. I guess there were miles of their tunnels underneath. It didn't look

much like the place for dry farming I had wanted.

"I decided to get rid of the pests first. Every time we had a rain I took my shovel and dug ditches to run as much water as I could into the rats' and ants' nests. The first few years I couldn't see that I was making

much headway, but after a while I noticed that the bare spots around them were covered with thick feather grass. The old rat dens were completely hidden. What had been eye-sores were now the best places on the half-section."

I remembered that the University of Arizona agricul-



Soil Conservation Service

An air view of the miracle maker's "piece of land." Vision, plus hard work with a shovel, has stopped gullying at the fence enclosing this 320-acre tract of Arizona rangeland



So fruitful have been Mr. Page's efforts in restoring the productivity of the rangeland, as shown here, that his tract has become a demonstration area in plant succession

turists had spoken of this when I had declared my intention of coming out to see the place. The pests had achieved an aeration and fertilization of the soil that tended to make it highly productive. They had also carried in seed which the flood waters had flushed from

underground with a result that was amazing.

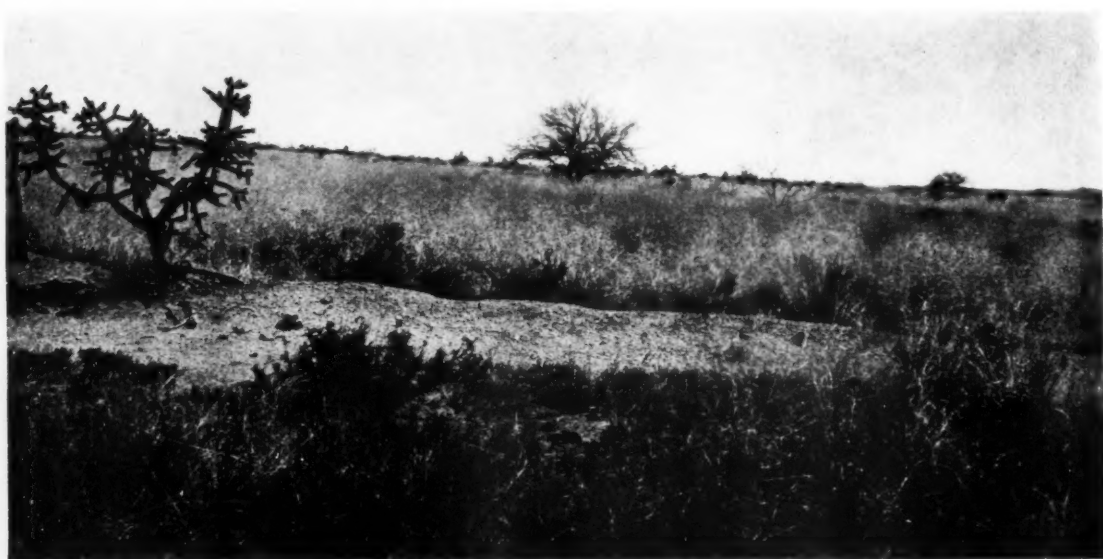
Mr. Page knew little of what scientists call plant succession, but he did know that nature, if given the time and the opportunity, has a way of replacing noxious or unpalatable plants with vegetation high in forage value. It was this that gave him courage when dry farming failed. For the slight rainfall came too late in the season. His crops had withered in the scorching sun before the life-giving moisture came. But he still hoped that the precipitation on the watershed above might be sufficient to enable him to catch enough in small tanks for watering a few cows. If the range plants could come back, and if he could grow even a few small patches of corn and small grains, it would mean a modest living for himself and his wife. This, too, after tragic trials, ended in failure. For lack of available water the cows had to be sold.

But the Pages were by no means licked. They had a few chickens and a vegetable garden. They had also

But he knew that human persistence with nature's assistance must finally win. Grass was beginning to grow on the dams and even though a part of the structure might break away, that which remained was being bound together by roots. So he rebuilt doggedly. After several years of this, the dams were completely covered with grass sod. One victory had been won.

But at this point death slipped in and robbed him of his wife, his helpmate, and for the first time he felt that he couldn't go on. In what he afterward called a moment of weakness, he allowed friends to persuade him to move into town and to accept an old-age pension from the State of Arizona. A young man was engaged to take care of his place and to carry on the work.

"But he didn't feel about it like I did," the old man said earnestly. "He couldn't see much of a future in it for him. As for me, well, I was worried all the time — afraid the gate was open or the fences down and that stock would get in and undo in a short time what it had



This shows one of the various little dikes built by Mr. Page with his shovel and spading fork to spread the flood waters. The dike has served its purpose and most of the water now is spread by the grass above the dike

some figs, apricots and a few grape vines. Keeping these things alive taxed their strength and ingenuity, for they had no well and there was never any money with which to have one dug. They had only a small cistern for domestic purposes.

Every drop of water that fell on the place was hoarded. A black cloud or the rumble of thunder was the signal for feverish activity. When the rain came, Mr. Page shouldered his shovel and worked like one possessed of a demon of energy. He dug small ditches at every place where there might be a concentration of flood water. He carefully guided it over the entire area to get the best possible distribution, and there it was left to spread out and soak slowly into the earth. That which flowed into the arroyos, or gullies, was watched anxiously, for here earthen dams and dikes had been built in the dry season, and the question was, "Will they hold?"

Usually they didn't. Time and again the structures were washed out, time and again precious water that might have been spread upon the thirsty earth was lost. And between the floods on the one hand and the parching acres on the other stood only an aged man with a shovel.

taken me years to do. Besides, I felt that I owed something to the state that was paying me a pension. I could pay that debt by building up the land for the future. It would be better for the next generation and would be worth more in taxes to the state. Of course, I could have sold the place, but I wanted to be sure just what would be done with it."

Harassed by such thoughts, and driven by a zeal that amounted almost to fanaticism, he had left the comfort and ease of retirement and had come back to take up the shovel. It was here, despite his eighty-one years, that I had found him at an early morning hour. A quail called from a fence post. His wrinkled face brightened.

"There wasn't a one on the place in the early days," he said. "In fact, there was hardly a bush big enough for one to hide under. But we liked the birds, and one of the first things we did was to plant a mulberry tree to attract them. The mocking-birds came with the very first crop of berries."

For a time he worked industriously. I followed at his heels. "Look!" he pointed. "It was right here that I saw the first Rothrock grama (Continuing on page 92)

A NEW VENTURE IN FARM FORESTRY

By WESTON DONEHOWER

MANY people have the impression that a great cornbelt state is not particularly concerned with forests and forestry. But this is not true. Indiana, for example, ranks forest crops eighth in value for the entire state. Its forest industries are widespread and diversified; and in December, 1939, Indiana initiated the first work in this country under the provisions of the Cooperative Farm Forestry Act, passed by Congress in 1937.

This is more than historic. It reflects both the importance of farm forestry to the country and the value farmers themselves are placing on their trees and woodland. For years the nation's 185,000,000 acres of farm woodland have been steadily deteriorating in spite of efforts by many interested agencies in better use of forest resources. Scattered widely on more than 6,000,000 farms, and representing nearly twenty per cent of the total farm land in the nation, the farm woodland problem remains one of the most important and challenging in land use and conservation today.

The Congress, in passing the Cooperative Farm Forestry Act, has taken account of this situation. Authorizing the Department of Agriculture to cooperate in the development of farm forestry with land-grant colleges and universities and state forestry agencies, the Act provides for assisting farmers in good woodland practices of management. It provides for tree and shrub planting stock, for protection of eroding land, and for production of wood products. It provides for aid in harvesting, utili-

zation, and marketing of wood products, and contains provisions also for carrying on investigations related to these problems.

An important part of the new program started in 1939 is the intensive projects established to determine what farm woodland management can do for farm economy. A limited number of farmers with representa-



Twenty per cent of the 6,000,000 farms of the nation are in woodland, for the most part remnants of the virgin forests (above) from which they were carved. Many forms of misuse, however, such as grazing by domestic animals (below), have resulted in deterioration to a point of low productivity. The Cooperative Farm Forestry Act of 1937, the first project of which was initiated in Indiana, is designed to restore the farm woodlot to its economic usefulness.



tive farm woodlands become cooperators with the Department of Agriculture, either directly or indirectly through the state. A forester is then assigned to study the problems of growing and marketing timber within the project boundary and to advise farmers about silvicultural and utilization practices. With an inventory of woods conditions at the start of the project and a record of what happens subsequently, these projects will tell the story of what forestry can do for the farmers.

It is not surprising that Indiana led the country in setting up the first cooperative farm forestry project. It has long recognized the value of woodland products and the importance of this raw material to the state economy. Prior to the establishment of project headquarters in December, 1939, a program setting forth the various work problems was developed by state agencies interested in farm forestry—the State Department of Conservation, the Purdue Agricultural Experiment Station, and the Purdue Agricultural Extension Service—in cooperation with the Soil Conservation Service, the Forest Service, and the Bureau of Agricultural Economics of the United States Department of Agriculture. Areas were then selected within which the farm forestry work was to be initiated, the first in southeastern Indiana with headquarters at Madison, the second in the north central part of the state with headquarters at South Bend.

The various state universities and agricultural experiment stations have carried

on investigations for years and have built up a fund of knowledge on farm woodlands. These studies have definitely shown the deteriorating effects on woods of continued grazing of livestock, and the corresponding ill-advised economy of attempting to produce meat on woodland forage. They have pointed out how the people of Indiana realize annually an income of \$14,000,000 from raw materials of the woodland—materials which are manufactured into articles worth \$140,000,000 and affect the welfare of industries employing 32,000 people. Furthermore, it is shown that in spite of this over ninety-nine per cent of the forest fires in Indiana are man-caused and therefore preventable.

Much helpful advice has been made available in the form of publications dealing with various marketing and utilization aspects of woodland products such as logs, crossties, piling, basket stock, and with tree planting and woodland improvement. The state extension forester and county extension agents have provided helpful assistance to land owners for a number of years

and evidence of their work may be seen in practically every county. A splendid system of state forests and parks has been developed, and the State Department of Conservation, in charge of this public estate, has done much to bring about increased interest in and support of all conservation measures. Under the provisions of the Indiana forest classification act some 1800 farm woodland owners have taken advantage of a more equitable tax system by having approximately 110,000 acres of woods and plantings classified for permanent woodland use. More recently, other government agencies have provided definite assistance in fostering farm forestry as part of their programs dealing with conservation and land use.

It was to learn something of the farm forestry problem that the writer recently visited the Hoosier State with its 3,000,000 acres of farm woodland. One is surprised at the extent and value of the timber, at the great diversification and widespread distribution of wood-using

industries, and at the amount of work accomplished in conservation by the state and local agencies. In Jefferson County, for example, the 1935 census shows thirty-two per cent of the 39,595 acres of farm woodland under protection from livestock. In October, 1939, fifty tracts of farm woodland, totaling 3,200 acres, had been entered under the Indiana forest tax law. Thousands of trees from the forest tree nurseries of the State Division of Forestry had been planted on eroding land.



The first farmer to sign a farm forestry cooperative agreement was Howard Clashman (right), of Jefferson County, Indiana. Here he is being congratulated by J. D. Zimmerman, soil conservationist

At the farm forestry headquarters at Madison, Joe DeYoung, forester in charge of the project, was anxious to explain the work. "We're mighty proud to have the first project down here in southern Indiana," he said, "and we've a lot to show. This community is really interested in conservation."

Having his headquarters in the office of the Jefferson County extension agent "helps to tie the work in with all county land use planning," he explained. Then he invited me to meet the members of the local farm forestry committee. "They're farmers and business men and are really the ones who make this program tick."

Later, as we strolled through the woods on his farm near Madison, I listened with interest to Howard Clashman, secretary of the Jefferson County Farm Forestry Committee, who was the first to sign a farm forestry cooperative agreement. "When the forests were here these people lived well," he said. "They had timber for their buildings and farm use, plenty of good fuel, and many a dollar was derived from the sale of timber or from

work in the woods."

It was easy to visualize, even then, the grandeur and beauty of what once must have been unspoiled forests of tulip poplar, oaks, maples, beech, gum, ash, and many other trees common to Indiana's woodlands. Here and there remained a splendid white oak more than three feet in diameter, or a tulip poplar towering well over one hundred feet.

"Yes, there were beautiful stands of timber here years ago," Mr. Clashman continued, "but unfortunately we didn't realize how quickly they would disappear. Why, in those early days our people burned regularly to keep the ground clear. Now, since the fire tower is up and we have learned to plant trees, they think differently."

Mr. Clashman explained how, as county superintendent of schools, he comes in contact with 2,400 boys and girls from six to eighteen years of age, and that he looks to them to make conservation history in the state. Helping to organize these young people into conservation clubs to plant and protect trees and to learn the value of conserving soil and forests is only one phase of his interest, however. Last year, with the aid of the County and State Extension Service, and the cooperative farm forestry project, he interested fifty-five students in developing their own black locust seedlings to plant at home on the farm.

We were coming gradually to the edge of the woods when Mr. Clashman remarked: "Now, we can't spend all day in my woods. I want you to see more of
(Continuing on page 80)



The nation's first cooperative farm forestry project in Indiana is emphasizing the value of woodland improvement, the removal of deformed and diseased trees so that healthy specimens may mature under better growing conditions



Methods for marketing farm trees more profitably and utilizing them more completely are being developed in Indiana. Logs, posts and mine ties are but a few of the products being produced by cooperating farmers to increase the farm income



Every farmer needs fuelwood, and under the new forestry program it is being supplied by the trees removed in improvement work and by the tops and smaller branches of those cut for lumber. Fuel not needed on the farm is sold

BANDING EAGLES IN FLORIDA

By MYRTLE J. BROLEY

MY HUSBAND pushed a handful of heavy, rounded pieces of aluminum in front of me. "Recognize these?" he asked, beaming. "Eagle bands. I'm going to try and band some young birds."

We had motored to Florida to spend the winter months and his curiosity had been roused one morning when we observed two bald eagles chasing one another. Then we discovered a mound of sticks in a large tree across the Bay and later watched one of the eagles place some fair



Eagle nests provided an interesting study and their contents often proved to be an old curiosity shop

sized branches on this. Driving about after that we noticed a great many more such nests and in most cases the birds were nearby.

One of these eyries was just a nice drive from our home and we visited it often, watching the lordly owners from the roadside.

When one morning we observed a white head emerging from the nest, my husband exclaimed, "She's sitting, must have eggs. I'm going up to see."

I tried to point out that it was dangerous to walk through the palmettos because of rattlesnakes, that even if he did get safely to the tree the eagle might attack him. He kept right on with his preparations, smiling in spite of my objections.

Watching through binoculars I saw him reach the tree and clamber up. At the nest he waved to let me know there were eggs, then busied himself with his camera. When he returned to the car he was elated.

"Two eggs," he said; "and it's an easy tree to climb. I can put up a blind and get pictures of the old birds, then the young — a whole series."

And indeed he did. When the young birds came along he took pictures of them at least once a week; but he did not have much luck with the adults, though he spent many long, hot days in the blind. He did learn a great deal about these splendid fliers, however.

The first bird banded was not one of the little fellows in this nest, but one whose nursery was eighty feet up in a tall pine. We discovered him by sweeping binoculars across a bit of countryside. The climb to this youngster was not easy. The lowest limb on the tree was fifty feet from the ground, and this my husband achieved by throwing over it a cord, to which a rope ladder was attached. Even then he was forced to use a short rope to haul himself to the high branches.

Slipping and scrambling, he approached the nest — and then came misfortune. The young eagle flopped and lurched out into the air, falling in the palmettos below. It was uninjured, but I could picture my husband's disgust as he came down the swaying ladder. I went over to see what he planned to do.

"Oh, I'll have to take him back," he said; "something might happen. He's not able to fly yet."

An hour and a half later the awkward baby was back



Banded at twelve weeks old, this eaglet is seen on his nest at lower left

in the nest, a little shaken by his experience. My husband was shaken also—with fatigue, and his face and hands were badly scratched. But he had put the band on the eaglet.

When we arrived home that night there was a letter from a friend advising us to band the eagles when they were very young. "Otherwise," he wrote, "they are apt to flop from the nest, and getting them back means trouble." My husband, looking at his bleeding hands and torn clothing laughed. "He's telling me!" he said.

Many of the nests we examined held two eggs but



Male and female (left) at about three months — the female is always larger in birds of prey, and very difficult to handle



FEBRUARY, 1941

several had only one. We estimated that sixty per cent of the eggs hatched. We also noted that thirty-two days passed before the pair we had watched so carefully were rejoicing in the advent of two babies, both of whom proved sturdy, a fact which pleased us greatly for we knew by this that our visits had not interfered with proper incubation.

Both birds took turns in keeping the eggs warm, and we often watched them change places. Later both brought food to the young, mostly fish — and they were splendid providers.

The nests of the eagles were worthy of study. Most of them were around twelve feet high, but one we found to be twenty feet, and ten feet across. We were told by people living near this nest that it had been used for twenty-five years. Sticks are added to a nest each year and on one occasion we watched a bird break off a branch as thick as my wrist as it flew past a tree.

On top the structure is fairly flat. The lining of Spanish moss, feathers and often a few reeds is scanty in some, abundant in others. We were quite touched when, five days before the young hatched, we watched parent birds fashioning a barricade about twelve inches high around their eggs — for all the world like a little fence to keep the babies from falling out.

Newly hatched eaglets are very weak; indeed, we were always afraid they would not survive. Covered with long, silky, whitish down at first, they grow darker as their new feathers form, and at twelve weeks they are practically black. White heads and tails do not come until they are three or four years old.

There were other things beside food in the nests we examined — large, apparently useless objects. We found a big Conch shell in one and, strangely enough, an electric light bulb in

Up in a Florida pine, 125 feet high, the author's husband holds a young eagle on the nest

another. From one nest a fish line was hanging the sixty feet to the ground. Someone had lost a fish and the eagle, finding it floating about, had carried it up. The hook was caught on the nest and we were glad the young eaglet had not swallowed it. In one nest my husband found a rat and a rabbit, in another an eel and a large turtle, while in still another a burlap bag.

Though the adult eagles flew around, often coming quite close while he was climbing or at the nest, my husband was not bothered by them. Great horned owls did injure him, however.

In Florida this fierce bird often takes over deserted eagle's nests. One of our best finds was an owl using an eagle's nest and sitting on one of her own eggs and one of the eagle's. Unfortunately, we were away for a week and this tree was cut down. Only a small part of it could be used for lumber, yet a nest and eggs were destroyed for it. We blamed ourselves for not having bought the tree but, naturally, had no knowledge that it would be taken.

At another eyrie which had been robbed of its treasures and appropriated by an owl, my husband decided to make a series of pictures. He approached the nest without trouble, but as he was getting the camera set up something struck him on the back with such terrific force he was almost knocked from the tree. The mother owl, coming up on noiseless wings, had surprised him. Every claw made its mark through his stout shirt and skin, but he managed to keep his footing. He got his pictures, too. When he came down I tried to dissuade him from trying to band the owlets, but he was resolved.

Six weeks later he went up again, fortified this time with a fairly heavy stick. Again the owl attacked and though he tried to wave her off she managed to inflict several nasty cuts near his eyes, on his cheeks and beside his mouth. He drove her away long enough to put bracelets on the young, but she came at him several times. When he reached the ground his face was streaming with blood, and for a few minutes I feared lest his eyes had been injured. It is some time since this happened and, though no serious damage was done, he still bears some nasty scars.

One breezy morning we were down near Fort Myers and observed a remarkable performance by a pair of eagles. Investigating a large nest, two birds flew from the trees as we approached. On the ground we found a dead adult bird, apparently wantonly shot about a week

before. Now the survivor of the pair had found a new mate.

The two soared high in the air, chasing and playing in their nuptial flight. At an altitude of about a thousand feet they suddenly locked beaks as they came together and executed five perfect cartwheels, anti-clockwise, wings closed tightly and legs straight out behind. Whirling in midair they tumbled down some four hundred feet in this extraordinary manœuvre. It was a thrilling spectacle as they whirled round and round. We were utterly amazed, never having seen anything like it before.

As the months went by more and more bands were sent for and just before leaving Florida we banded the last of our birds — forty-four in all. Each band is numbered and we sent in a card to the then Biological Survey — now the Fish and Wildlife Service of the Department of the Interior — with the number and other information to be filed away. All bands were closely examined after being put in place to be sure they fitted smoothly together. Otherwise one might catch on a branch or vine, causing injury or even death to the young bird.

While the object of the banding was to learn what percentage of young birds met disaster during their first or second year, three of the five returns to date have been most surprising. Two were shot in Virginia and one near Columbiaville, New York, a hundred miles north of New York City, the first intimation to the Audubon

Society that Florida eagles moved north during the summer months. Various excuses were given in each for shooting these magnificent birds, but in our estimation their death was wanton destruction. One man explained that he wanted a mounted eagle. Could any one possibly prefer an inanimate bunch of feathers to the wonderful sight of a great bird wheeling, soaring on wide wings?

We became greatly attached to the large babies and every time an aluminum number was put in place we breathed a silent prayer that no misadventure might occur. Needless to say we plan to do much more of this work.

(EDITOR'S NOTE: Since this article was written, protection for the bald eagle in the United States has been provided by an Act of Congress, signed by the President on June 16, 1940. The Act provides that "persons taking, possessing, or dealing in bald eagles" will be subject to a fine of \$500, or up to six months' imprisonment, or both.)

BELIEF

I do not know if there is a God.

I only know

Something there is that lifts the mists
At sunrise time, and sets the world
aglow

With bright, warm light;
That coaxes daisies' heads up from the
sod

And makes the breezes blow;
And later in the day, assists
The fir tree shades to lengthen, grow
Into the quietude of night.

It is enough to know.

—John C. Frohlicher

1941 EXPEDITIONS FOR THE TRAIL RIDERS OF THE WILDERNESS

Although definite dates have not been set, ten expeditions—two in the East and eight in the West—have been tentatively scheduled for 1941 by The American Forestry Association for its Trail Riders of the Wilderness. This is the largest number of trips yet undertaken, an indication of rising interest in this form of wilderness recreation. In addition, and conducted in association with the Trail Rider trips, The American Forestry Association will sponsor a canoe expedition in the wild Quetico-Superior country of northern Minnesota.

For Trail Riders who like to pioneer, an expedition is being planned to the magnificent Glacier Peaks country of the Chelan National Forest in Washington—to fall either in late July or early August. Also, the trip to the Flathead-Sun River Wilderness (now the Bob Marshall Wilderness) of the Flathead and Lewis and Clark National Forests of Montana will be resumed. Other expeditions for 1941 include two to the Great Smoky Mountains of North Carolina, one in June, the other in September; the Sawtooth Wilderness of the Sawtooth and Boise National Forests of Idaho, in July; the Hilgard Wilderness of the Gallatin National Forest of Montana, in July; the Gila Wilderness of the Gila National Forest of New Mexico, in July; the Maroon Bells-Snowmass Wilderness of the Holy Cross National Forest of Colorado, in July; and in August, the Flat Tops Wilderness of the White River National Forest of Colorado, and the Kings River Wilderness of the Sequoia and Kings Canyon National Parks and the Inyo National Forest of California.

Watch for further announcements—but make plans now to ride with the Trail Riders of the Wilderness this summer.



The Canyon from Bryce Point — a panorama of breath-taking beauty

Under the East Rim

By R. V. REYNOLDS

IN SOUTHERN UTAH lies a mountain range pointing toward Arizona like the prow of a giant battleship. This elevation, known to the Utes as the Paunsaugunt, now forms part of the Powell National Forest. At the north end are two cloud-kissing peaks. The less lofty southern portion is a plateau covered with a forest of yellow pine and surrounded by towering cliffs capped with pink limestone.

To the eastern part of this plateau, one October day in 1904, came two men. One was an Agent of the Bureau of Forestry. The other was his camp mate, Sheriff Henrie of Panguitch.

"Here's the place," said the sheriff. "I saved it for the last of the trip so you could remember some real scenery when you get back East." The Agent smiled and thought of the Hudson valley.

They emerged from the pines and halted at the brink of such a precipice as is found only in the mountains of the West. A breath-taking panorama unrolled before them as far as the eye could see. For a while they gazed silently. After a long survey the government man produced a green notebook and began to write a statement which, in substance, appeared later in his report to

the then Chief Forester, Gifford Pinchot.

"To the east is a wilderness of rough country, stretching across the Paria, past the south end of Aquarius Plateau, in a long series of deeply cleft sandstone mesas sloping to the canyons of the Colorado. Kaiparowits Mountain, a needle-like cone, stands up 20 miles away.

"Close under the east rim of the Paunsaugunt is a scope of country showing examples of erosion which would be hard to match elsewhere. It consists of chimneys and mesas of bare sandstone and lava, contorted and eroded into every conceivable form, pierced and cleft in many directions, and splashed with vivid color. It brings to mind Milton's description in *Paradise Lost*—

*"Rocks, crags, and mounds confusedly hurled,
The fragments of a ruined world."*

The forestry man snapped a rubber band around the notebook and rose to his feet. "Sheriff," said he, "does this place have any special name?"

"Maybe not on the map," the Utah man replied. "But there was an old fellow name of Bryce used to live down there in a cabin. So most of our folks call it Bryce's Canyon."

TREES DON'T STAND STILL

That's What This Pennsylvania Farmer Has Found

By LESTER H. HARTWIG



In the white pine woodland of the Albright farm — this area has been carefully cleaned out and put to added service as a picnic ground — visitors welcome

TREES ARE just as much of a crop as spinach, corn or raspberries on the Alfred L. Albright farm in Centre County, Pennsylvania. There's one big difference — it takes trees longer to mature.

The Albright farm lies on beautiful rolling hills and is situated between two of Pennsylvania's long mountain ranges — the Tussey range to the south and the Bald Eagle to the north. Deer, rabbits, and other game abound aplenty in this woods-dotted region.

Eastern though it is, and settled for hundreds of years, the Keystone State boasts of approximately three and one-half million acres of woodland, or nearly twenty-five per cent of the gross farm acreage of the state. And this acreage is on the increase through the encouragement of governmental agencies and because more and more farmers are realizing that trees are valuable as a crop, even though long neglected.

When the Albrights moved to their farm twenty-one

years ago, little thought was given to the seventy-five acres of young woodland — mostly white pines — that lay about forty rods south of the farmstead. They knew the trees were there, and they hoped that someday there'd be time to clear the land for cultivated crops.

That was all the thought the Albrights formerly gave to their wooded acres. Yes, the woods provided them with all the firewood and timber they needed. What else was it good for? Foresters from the Pennsylvania State College, not more than fifteen miles away, helped answer that question. Here, they said, is an opportunity to test at first hand the principles we are teaching.

Mr. Albright, always alert to any opportunities that might make his farm more productive, immediately co-operated with their ideas. Why shouldn't he, particularly if it meant finding a use for seventy-five acres of what appeared to be waste woodland?

What were their ideas? As every farmer knows, all

crops require a plan of management. For example, corn is planted for its grain. To obtain maximum yield, the seedbed must be prepared properly, the seed planted at a definite time, and the crop cultivated and harvested according to a well developed plan. The same is true of a woodland crop. And just as corn may also be grown for fodder or silage, so can trees be grown for various uses, including fuelwood, timber, erosion control, and the protection of the farm water supply. On the Albright farm, fuelwood and timber are the main crops. At the same time, however, the woods control erosion and provide a refuge for wildlife.

There's one thing about trees in a woodlot to which the Penn State foresters called attention. Trees never stand still. If a piece of land is cut clean of timber and then allowed to revert, thousands of young seedlings immediately begin to cover the land with a new crop of verdant green forest. They struggle with each other for their share of light, water, and food. Each year the weak shrivel and die. The survivors may or may not develop into the most useful kind of trees. Because of the everlasting struggle for existence, well located trees may grow slowly. That is why Penn State foresters suggested to Mr. Albright that he make an "improvement cutting" of his woodland.

An improvement cutting can be compared to cultivating a field of corn. It is the removal of undesirable or "weed" trees to give the more desirable specimens an opportunity to make better growth. The Albright woods, eleven years ago, would have compared favorably with an extremely weedy field of corn. The stand was crowded. Branches hung to the ground. There were trees of many varieties, some good and some bad.

Mr. Albright set about the task of cleaning his woodlands with the vigor with which he attacks all his problems. Since the foresters figured there was money in his woodlot, he determined that he would find it.

There's one thing about an improvement cutting that does make it entirely different from cultivating a field of corn. When you cultivate corn and pull the weeds, you don't get your hands on any immediate profit. But when you chop down a crooked tree, you can cut it into fuelwood and often make a cash crop of it. Many of the trees removed during an improvement cutting can be cut into boards and planks



The lumber from the improvement cuttings goes to a mill set up in a centrally located spot in the woods

— and other salable products. Mr. Albright saws his lumber with a sawmill set up in a centrally located spot in the woods, and on bright, cold winter days, you can hear the whirl and hum of the blade as it tears its way into the logs.

"Our first job was to remove all crooked trees and those we were certain would never make top grade timber," Mr. Albright explained. "The job would have been much easier had we cut everything and we would have made more immediate money but we wouldn't have had anything left when we got through. The way we've done, the remaining timber is worth more than the entire stand was when we started. A lot of the trees we took out weren't worth much, but we got more than enough for them to pay for our work."



Typical logs from the Albright woods, ready for the sawmill eventually to be made into salable products

Maybe some of the trees were not worth much, but the best ones cut into lumber sold locally at the rate of \$25 a thousand board feet. In addition to cash sales, much of the lumber was used in the construction of a summer house, outbuildings, and in the repair of older structures.

"One of the best things about having our own logs and sawmill is that we can go out and cut a log into just the kind of lumber we want," Mr. Albright said. "That's a lot cheaper than going to town for a few boards."

Originally, when the improvement cutting was started about eleven years ago, it was planned that seven and one-half acres should be cleaned each winter. That way, by the end of ten years, the first tract would be ready for another cutting. The plan, however, has been extended over a longer period since two men have done most of the work—and this during the slack winter periods. Nevertheless, most of the inferior trees have been "harvested" and the branches in the entire lot removed from the older trees just as high as a man can reach with an ax.

Improving the farm woodlot is hard, strenuous work, but you don't hear a word of complaint from Mr. Albright. For one thing, reduction of the fire hazards has provided cheap insurance against costly fires. For another, the stand is healthier and much more vigorous. And the yearly growth of standing trees is much greater than formerly.

"Had we cut all the trees as we went along, some would have been small. Sure, we could have used them for posts and firewood, but there were enough others for that," he pointed out. "The trees we left standing will eventually develop into valuable timber. Some of the older trees have already. They've been growing mighty fast since we cut the trees that were crowding them."

Here's something you can't help but notice in the Albright woodlot. Where hardwoods have been cut to give the favored trees—white pines—a chance to mature, large patches of sunlight often have been let in. In areas thinned first, young trees are coming in by the hundreds. Some of the young pines are already a foot high. No, there is little danger that Mr. Albright will

ever sink an ax into these trees to cut them for timber. He has enough other trees to keep him busy during his lifetime. He'll leave those to make his acres more valuable than they were when they came into his possession.

No farmer does much with a crop unless he sees some way that it will make money for him. It is conservatively estimated that during the past eleven years Mr. Albright has removed approximately 125,000 board feet of timber from his seventy-five-acre woodlot. Using your grade school arithmetic, how much would that lumber be worth at \$25 per thousand? Remember, of course, that much of it was used right on the farm. Bear in mind also that the value of the standing timber has been greatly increased at the same time.

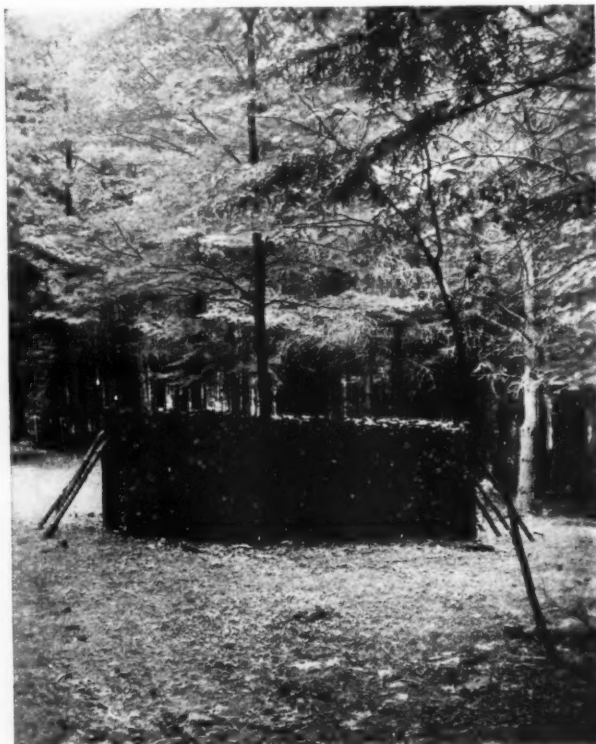
Now Mr. Albright is "sold" on trees as a farm crop.

Here are a few of his arguments: "All you need is to help Nature a little and she comes through with the best crop on the farm. While you're improving the crop, you're getting something in return all the time. I've never collected much more than exercise and a good appetite from cultivating corn, but even the poorest 'weed' trees make firewood."

One of his strongest arguments in favor of his tree crop is its safety. You don't gamble nearly as much as you do when you plant a crop of corn. The tree crop keeps growing right along, year in and year out. Properly handled, it reproduces itself. There is no plowing, no planting, and no cultivating as is the case with corn. No money need be spent for expensive fertilizers. The heavy work comes during the winter when often

there is little else to do. Above all else, of course, is the fact that there is much less danger of not harvesting a good crop than with corn and small grains.

Mr. Albright prizes his timber acres highly. "I've always loved the woods," he told us as we prepared to leave his farm, "and now I can enjoy them and get a profit from them at the same time. I don't know of another crop I could grow that would increase in value every year with so little effort on my part to help it grow. Yes, trees don't stand still."



Fuelwood is a by-product from thinnings that saves money by keeping the home fires burning

—SYMPHONY DEDICATED TO THE AMERICAN FORESTRY ASSOCIATION—

Carl Epert, noted symphonic composer, whose forest symphony "Timber" is now being made ready for presentation, has dedicated this symphony to The American Forestry Association. In recognition of the Association's part in financing the preparation of the score and orchestral parts (see "Editor's Log," January issue), the noted composer writes, "I take great pleasure and am very happy to dedicate 'Timber' to The American Forestry Association."

Replying in behalf of the members of the Association, Ovid Butler, executive secretary, said, "I want to express in behalf of the Association our appreciation of your dedication of 'Timber' to the Association. We count this a rare honor."

EDITORIAL



CONSERVATION OBJECTIVE

AS A PEOPLE, we see today our most cherished possessions in danger; vital interests of our country in danger of aggression; our social structure in danger of "fifth columns"; and our land in danger of ruin by insidious soil wastage. Our first duty of national defense is fully supported by our people. This impetus for national defense may well be extended to safeguarding our lands from wastage and ruin and for more abundant productivity. Our armaments will not be paid for with gold, but with food and other products of our soil. Soil defense is essential to national defense.

Neither can other nations nor can we long keep up this exhausting effort of preparation for and the carrying on of wars of destruction and annihilation. Sooner or later we shall need an objective to carry our national effort into fields of constructive effort after the needs for machines of destruction have come to an end. Unemployed, following stoppage of war factories, will need jobs as do the unemployed today. A comprehensive program for conservation of our soil, water, forest and other land resources will furnish a very considerable outlet for such employment; for we have scarcely begun to fit and to equip our land for an enduring social order.

Besides, the world, exhausted and weary of war, may perchance be willing to turn away from objectives of destruction to objectives of conservation as a way out of this hellish frenzy of annihilation. An alternate goal exists in the conservation of material and human resources; but such a goal, to be effective, must be made realistic; it must be expressed in terms of works done that all may understand its meaning. For example, how can we make our farmers and our people realize that the conservation of the blessings of heaven-sent rain, by contour cultivation, by strip cropping, by terracing, by woodland management, have everlasting significance in the life and history of our people?

Once upon a time, our people had an overpowering objective in "Winning the West"; later in "Get-rich-quick"; still later, we were uplifted by the inspiring objective, "To make the world safe for democracy." Our soldiers did a magnificent job of fighting for the last objective, but our people failed to carry on. Since that let-

down, our nation has had no clear-cut national goal to channelize the energies of the people and especially of our youth. Now we are developing a major objective in the national defense of the American opportunity to build here a living democracy. But this goal must have more content than defense against outside enemies, important as that is. It must have a sustaining and enduring objective through times of war and peace, to capture and hold the energies of our people to conservation in its fullest sense.

An economy of exploitation has brought nations of the world into conflict over land and access to its products. Today, the world is seeking to solve these conflicts by means of the age-old formula of destroying antagonists. Equipped as we are with science, machines and power, we are capable of destroying the works and achievements of mankind, and of nature itself, as never before in the history of the human race. Civilization is even now committing suicide in the Far East and in Europe. If civilization is to avoid the long decline that has blighted North Africa and the Near East for the past thirteen centuries and will continue to blight it for years yet to come, society must be born again out of an economy of exploitation into an economy of conservation. If the energies of mankind now devoted to destruction and preparation for destruction could be turned to improving and sharing the fruitfulness of this old world of ours, there should be more than enough for an even greater population of the earth to live in peace.

Here is an abiding goal for our people — the conservation of our land resources necessary to our own welfare, and as a beacon light of example for a war-weary world. Works of land conservation make such an objective realistic and understandable by all people; and they may be made to carry deeper meanings throughout our social structure to the conservation of human resources and of our heritage of liberty and freedom. Defend ourselves against aggressors we must, but as a harbor of hope for the future, our people and especially our youth need a light that will draw their energies to the building of an enduring civilization in this country, — a land of greater promise than has been vouchsafed any people.



WHITEBARK PINE

Pinus albicaulis, Engelmann

By G. H. COLLINGWOOD

THE wind distorted crown of whitebark pine is a feature of high mountain areas from North Central British Columbia, southward irregularly along the Rocky Mountain summits of Alberta, Montana, Idaho, Wyoming, and northern Utah, and again along the coast range summits of the Cascades and Sierras into southern California and Arizona. In its northern range this pine grows at elevations of 6,000 to 7,000 feet. Southward it thrives at increasing elevations up to 12,000 feet in the Sierra of California. On high summits temperatures of sixty degrees below zero are relieved by a scant three months of frosty summer, and prevailing winds often blow with such unabating force that most of the stout, flexible limbs develop on the leeward side of the thick, squatty trunk. At lower elevations and in protected coves, better soil and more encouraging surroundings combine to produce relatively tall

and symmetrical trees. Even here, however, heights of more than sixty feet or diameters exceeding two feet at breast height are rare. Where undisturbed by wind the side branches, and especially those of the upper crown, stand almost erect.

Whitebark pine has five stout, stiff, slightly incurved needles in a bundle, therefore belonging to the whitepine group. They are one and a half to two and a half inches long and marked on the back with one to three rows of light colored pores or stomata. The bundles of five dark-green needles are usually clustered toward the end of the stout orange branchlets, and remain from four to eight years before being shed.

Scarlet male and female catkins appear on the past year's growth during early July. In late summer of the second year the pistillate ones develop into small round, almost stemless cones which are

one and a half to three inches long. They ripen in August and are ordinarily a dark purplish brown. Inside and at the base of each cone scale are two sweetkerneled, winged seeds, plump on one side and flattened on the other. They are nearly half an inch long and about one-third of an inch in diameter. The narrow translucent wings stick to the sides of the cone scale so that the seeds must break loose. They are shed slowly through the late autumn and early winter. Squirrels, chipmunks, and other small animals and birds seek them greedily and are largely responsible for their sparse distribution. The busy rodents often store the seeds in narrow rock crevices on high, exposed elevations where germination may take place. Too often the tender young seedlings are whipped and worn in two against the sharp granite rocks by constant winds. At high elevations the surviving trees may sprawl over the rocks to form low springy mats of tough limbs, which provide shelter for mountain goats, bear, deer, and other animals, and not infrequently for an occasional traveler or sheep herder. Heavy snows keep the trees flattened for the better part of the year, leaving little time for the limbs to lift



Devereux Butcher

A dweller of high places, subject to unabating winds, whitebark pine develops a thick, squatty form which with age and depending on exposure may become distorted in shape

themselves. The bark of the larger trunks sometimes carries a whitish cast, while young trunks and twigs are clothed with fine, white pubescence. This is responsible for the common name "whitebark," as well as for the scientific name *Pinus albicaulis*, which may be translated as "the pine with the white stem."

The bark is scarcely more than half an inch thick and comparatively tender. For many years it remains characteristically smooth, but with maturity develops narrow vertical and horizontal cracks with the outer surface covered by thin light gray to brown scales. Beneath the scales, the inner bark is reddish brown. The winter buds are more or less egg shaped, and about one-third to one-half inch long.

Whitebark pines are seldom large enough or in sufficiently heavy stands to be of commercial importance. Occasionally, however, individual trees at lower elevations may be cut for fence posts or lumber. The wood is light in weight, nearly white, brittle, and marked by many close annular rings. Superficially, it resembles the wood of western white pine and, no doubt, small quantities are sawn and marketed with this more important relative. No figures are available covering either the estimate stand, the possible growth, or the annual cut of whitebark pine.

During its early development, whitebark pine is fairly tolerant to shade, but with maturity it demands full sunlight. Its growth is so slow that timberline trees scarcely five feet high have been found to be fully 500 years old. Other trees only three and a half inches in diameter have revealed as many as 225 annular rings. John Muir, with the aid of a magnifying glass, is reported to have counted seventy-five annular rings in a twig only one-eighth of an inch in diameter. A veteran tree with a trunk seventeen inches in diameter is recorded as being 800 years old.

Ordinarily whitebark pine associates with other hardy mountain trees such as alpine fir, limber pine, Engelmann spruce, foxtail pine, Lyall larch, western juniper, Rocky Mountain juniper, and knob-cone pine. Of all these trees whitebark pine is most frequently confused with limber pine, *Pinus flexilis*. In general the range of whitebark pine is more northerly, but the two trees may occupy the same area in several regions. Both are five needled pines with many common characteristics. They are best distinguished by their cones. Limber pine cones are three to ten inches long, with slightly reflexed scales, while those of whitebark pine are only one and a half to three inches long and more nearly cylindrical, with thickened scales armed with sharp points. The rows of light colored pores or stomata are on all sides of the limber pine needles instead of being limited to the back side as with whitebark pine.

Like all five needled pines, whitebark pine is susceptible to the white pine blister rust. Due to their scattered growth and relatively low commercial value, however, no special protective efforts are being made. Bark beetles also take a fairly heavy toll, but the greatest enemy is fire. Its natural habitat makes it particularly susceptible to lightning.

Whitebark pine is suitable for ornamental purposes and is so used to a limited extent. Trees selected from high elevations may maintain an inherited tendency to develop low spreading forms suitable for many landscape purposes.



Asahel Curtis

Of the whitepine group, the tree has stout, stiff, incurved needles, one to two and a half inches long, in bundles of five. The cones are small, almost stemless and a dark, purplish brown



Devereux Butcher

The whitish cast of the bark and stems gives Whitebark Pine its name



The natural range of Whitebark Pine

A New Venture in Farm Forestry

(Continued from page 69)

the forestry problems in this section and talk with others who own timber and are interested in conserving our forests. This business of growing and using more of our timber is one we're all interested in. That's why we people in Jefferson County are trying to develop a cooperative farm forestry project."

So it was that we visited Sam Clashman, another member of this same pioneer family which grew up in southern Indiana, who lived down the road a short way. As we approached, Sam greeted us heartily with, "Have you time to look over my woods? I've been making a thinning and I want some suggestions."

He explained that he was getting his winter wood from the improvement and planned on working over five acres each year. An examination of his farm disclosed that he was carrying on the type of forestry practices which would keep his woods productive.

"I'm taking out the crooked and diseased trees and favoring those fine white oaks and tulip poplars," he explained. "We used to pick out the best trees we could find for winter wood because they split easily and made a lot of fuel. But not any more. Now we select trees like that crooked beech and black gum over there. They make good fuelwood and we have something left. Those big, fine oaks I'm leaving right there to help educate my son."

He pointed to a fringe of low shrubby growth along the border of the woods next to a field. "Do you see that? I leave that there purposely. It encourages wildlife."

Further along in one corner of the woods we noticed an attractive little spot where a picnic table and stone fireplace had been built. "That place was an eyesore when we bought the farm," he said, "but we fixed it up and now we get a lot

of enjoyment from it. Every farmer ought to have a small place reserved in his woods for family picnics."

As we approached a fine white oak fully thirty inches in diameter, Sam stopped and looked thoughtfully up at the splendid bole, straight and free from limbs. "This is the type of tree I leave to mature," he said. "It can be cut right now and will yield at least three twelve-foot logs and some fence posts. The tops will be used for fuel. I make my woods pay their way and it all adds up to more income in the end."

Visiting the George Black farm near Kent presented an opportunity to see what trees do in Jefferson County. In 1909, Mr. Black planted two and a half acres of rough land to black locust seedlings. By 1939 this planting had produced a total of 2,006 line posts and 116 corner posts and braces which were sold locally for \$375.70. In addition, 230 posts, worth \$48, were used on the farm, making a total income from the planting \$423.70 in thirty years.

J. G. Zimmerman, soil conservationist assisting Mr. DeYoung, explained how farm woodland management ties in closely with the farm business and soil conservation. "Our farmers," he said, "are interested principally in growing livestock, grain, canning crops, and tobacco. But each has some woodland in need of treatment and some rough land that is eroding and should be planted to trees."

Pointing out that every acre on the farm should serve some useful purpose, he explained that the first step was to determine what the soil can grow best and still meet the farmer's needs, and at the same time be protected from erosion.

"When the slope is too steep to allow cultivation," he continued, "we work out with the farmer the use of such land for long-term meadow or pasture. On a slope

that can be safely used for corn or other grain, we divide it into narrow strips following the contour. Land too steep for cultivation, pasture, or hay is planted to trees."

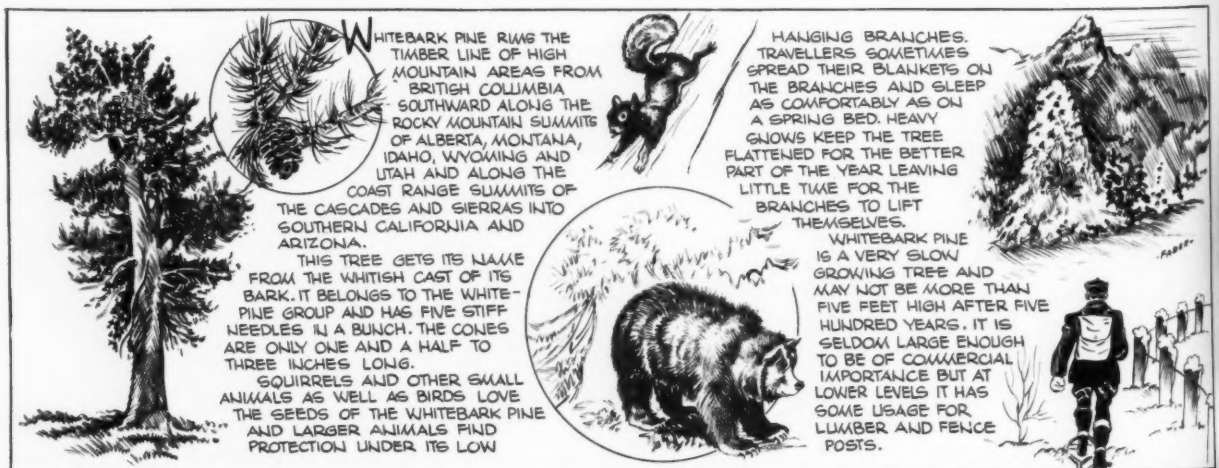
Woodland, he believed, was an important crop in conservation farming, but in spite of favorable soil and climate in Jefferson County, trees needed to be protected from fire and grazing damage.

"This country is famous for its white oak and yellow poplar," Mr. Zimmerman concluded, "and we have good markets for wood products. Nearby are industries manufacturing lumber, veneer, furniture, handles, baskets and other products. Also, there are a number of small sawmills operating locally. Fuelwood, posts, and logs are readily sold by farmers around here—and it means extra cash. But we believe in growing trees for another purpose too, for use right on the farm. Every farmer needs fuelwood, and each year fence posts need replacing. Perhaps a storage shed needs to be built or a barn repaired. We don't have figures on it here, but I know that in other places farmers use as much as 2,000 feet of lumber every year for home use. Having that lumber in his woods means money in his pocket."

It is common practice for conservationists to bewail the apathy of local people toward protection and wise use of their forest and soil resources. If such a visitor to Madison would talk with members of the farm forestry committee he could not help but share the enthusiasm of some of the leading farmers and businessmen for conservation. For here is an example of what people can do in their community when they are interested in the welfare of the land. John L. Sample, local grain dealer, and president of the farm forestry committee in Jefferson County, would

(Continuing on page 94)

TREES AND THEIR USES—No. 55—WHITEBARK PINE





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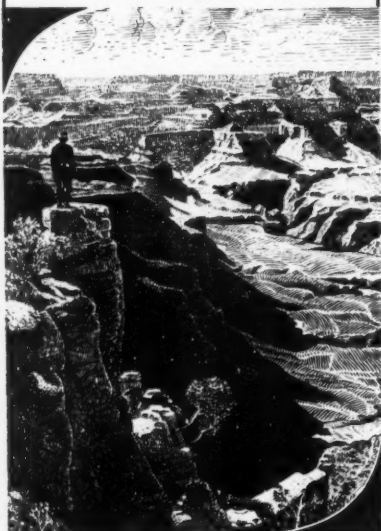
But this is only *one* of the many big jobs TracTracTors will do for you. They are the choice of loggers who demand *results at a profit*. They have won a big following because they have a greater amount of power for their size, or, as the engineers put it, "a more advantageous power-to-weight ratio." Their performance on steep grades and sharp inclines is outstanding. Get acquainted with the four new International Diesel TracTracTors. Call the nearby International Industrial Power dealer or Company-owned branch for detailed information.

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Name

Address



S. T. Dana

celebrated the fortieth anniversary of its founding with an attendance of more than five hundred out of a total membership of about forty-seven hundred. The comparative youth of the organization is indicated by the fact that six of its seven founders are still living, and that four of them—Henry S. Graves, William L. Hall, Ralph S. Hosmer, and Gifford Pinchot—were at the meeting.

Speakers brought out that during the forty years that have elapsed between these two memorable events, there has been much progress in certain phases of forestry. The national forest system has been greatly enlarged and, what is far more important, placed by the Forest Service under an administration which has attained an unusually high level of governmental efficiency. State departments of forestry have increased in number and still more in effectiveness. Fire control, though still far from perfect, has been tremendously strengthened. Research in the growing and utilization of forest products has been undertaken in a comprehensive way. Education, both technical and popular, has made steady advances. Recognition of the many services performed by the forest and of its value as a social asset is now more widespread than ever before.

Yet with all these advances, the meeting made it clear that the picture is not entirely a rosy one. Satisfactory forest practice, while on the increase, is by no means general on the three-fourths of our forest lands in private ownership. These lands are still for the most part being handled with little conscious effort, aside from fire control, to maintain or increase their productivity, and even less to establish sustained yield. Some view this situation with alarm, many more with uneasiness, a few with complacency. What to do about it occupied a large share of the attention of the foresters at their recent meeting.

Ever since there was a profession of

Forestry at Forty

Society of American Foresters in Meeting Marking Fortieth Anniversary Reviews Progress and Comes to Grips over Question of Public Regulation

By S. T. DANA

Forestry as a profession was born in the United States on November 30, 1900, when seven young men met in the office of Gifford Pinchot to organize the Society of American Foresters.

Last month that same Society, meeting in Washington,

forestry in this country, the problem of how to bring about better management of private forests has been a more or less controversial subject. Early in the present century, the Forest Service attempted its solution by preparing working plans for the management of individual properties in cooperation with their owners. These sounded well on paper but were so seldom actually applied as to lead to the remark that forestry was being practiced "everywhere except in the woods."

Immediately following the World War came the campaign to force the adoption of better forest practice by private owners through mandatory legislation. Opposition to public control of any sort, coupled with vigorous differences of opinion between advocates of federal and of state control, resulted first in a stalemate and later in an agreement to try again the cooperative approach. This was done in 1924 through the passage of the Clarke-McNary Act, which increased the federal government's participation in fire control, initiated federal cooperation in an extremely modest way in the reforestation and management of forest lands owned by farmers, and provided for comprehensive studies of the important subjects of forest taxation and forest insurance. When neither these measures, nor the recommendations of President Hoover's Timber Conservation Board, nor the "rules of forest practice" formulated under the National Industrial Recovery Act led on any considerable scale to marked improvement in the management of private lands, the Forest Service turned once more to the regulatory approach, which it has been advocating with increased vigor for the past six or seven years.

It was therefore natural that the Society of American Foresters should devote the concluding session of its three-day program to "Regulated Forest Management in the United States." So intense, in fact, was interest in the subject that it cropped up in the very first paper presented at the meeting and at intervals thereafter. In the opening session one speaker advocated adoption of public regulation as the "spark plug" which would impart force and drive to the entire forestry movement, while another denounced it as an undemocratic invasion of the Bill of Rights. Between these two extremes, nearly as many different shades of opinion were expressed as there were speakers.

"Information and Education," "Forestry and the National Defense," "New Developments in Forestry" and "Society Affairs" were also discussed.

The entire meeting and the forty years of progress which it celebrated constituted

a splendid and well-deserved tribute to the far-sighted vision, the untiring enthusiasm, and the conspicuous ability of the little band who created the profession of forestry in America. To them, to their contemporaries, and their successors goes credit without stint for having developed a program of public forestry and a public appreciation of the importance of forests to our national well-being that forty years ago did not seem within the realm of possibility.

This success has tended to make foresters, and especially foresters in public employ, impatient of the slower progress that has been made on private as compared with public lands. The fact that the managers of the latter are under no necessity of showing a financial profit has led them to minimize the economic limitations under which the private owner must operate. Depleted and idle forest lands, the decreased opportunities for the employment of labor and capital, and the complete disappearance of once prosperous forest communities are still too common a result of forest utilization. They make those who see in forestry an effective means of putting a stop to these evils dissatisfied with the slowness of the evolution that is gradually taking place in the thinking and practice of the private owner from timber mining to timber cropping. Not unnaturally some turn to public control of the activities of the private owner as a desirable means of speeding up the process.

If the recent discussions are a fair cross section of the thinking of the profession, the views of its members as to the desirability of regulation, and as to the best means of making it effective, are nearly as divergent as was the case twenty years ago. This applies alike to men in public and in private employ. On no other issue are there wider differences of opinion among those whose interest in the advancement of forestry on private lands is unquestionably sincere.

The American Forestry Association is on record as endorsing the basic principle of utilizing the police power of the state as a means of keeping forest lands productive. This is about as far as regulation is likely to go in bringing about improved management. It is not likely to effect the drastic changes which its more ardent advocates hope or its more bitter opponents fear. Social control, in forestry as in other fields, can be used effectively to prevent obvious abuses, such as forest devastation, but not to enforce optimum practices, such as intensive forestry. It thus has an extremely useful but decidedly limited function. On this point, there is probably more general agreement among foresters than appears on the surface.

Forest practices which go beyond the minimum that legislation can reasonably be expected to enforce will be adopted when and only when private owners can be convinced that they will pay. While many owners have probably not been as open to conviction as they might have been, it is equally true that foresters have

(Continuing on page 90)



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FORESTRY IN CONGRESS

THE BUDGET which President Roosevelt sent to the 77th Congress on January 9, if approved by the Congress, will call for conservation work during the 1942 fiscal year costing almost one billion dollars. This figure includes, in addition to the appropriations recommended for the regular conservation agencies of the Departments of Agriculture and Interior, those budgeted for the Civilian Conservation Corps, the Tennessee Valley Authority, and benefit payments to farmers for soil conservation practice. This last mentioned item is increased by \$37,000,000 to total approximately \$500,000,000.

Increases are also provided for most of the specialized conservation agencies as represented by the Forest, Soil Conservation, National Park, and Wildlife Services. In the aggregate, these increases approximate \$3,000,000. The total estimate for the Forest Service, including \$10,000,000 for forest roads and trails, is \$30,000,000 in round figures, which represents an increase of \$579,000. The more substantial increases are: \$1,000,000 for forest roads and trails; \$300,000 for cooperative forest fire prevention under the Clarke-McNary Act, bringing this item up to \$2,500,000—the full amount authorized by the act; \$1,000,000 for the acquisition of land for national forests, making the total funds available for this work \$2,000,000, plus an increased authorization of \$245,000 of the receipts from certain national forests for land purchases; and \$50,000 for the control of the white pine blister rust, lifting the Service's share of funds for this work to \$694,000.

The total provided for white pine blister rust control work during 1942 is \$1,409,000—an increase over the cur-

rent year of \$365,000. Of the total amount the sum mentioned above is bracketed to the Forest Service; \$500,000 to the Bureau of Entomology and Plant Quarantine, and \$215,000 to the Department of the Interior.

As against this substantial increase for protecting the white pine, the new Budget imposes a twenty-five per cent cut in appropriated funds to control and eradicate the Dutch elm disease. This item is cut from \$400,000 to \$300,000. The justification given by the Budgeteers is that the

disease is under control—an assumption that appears untenable in view of the fact that supplemental emergency funds are highly dubious and that curtailment of the present campaign to control the disease may undo the work already done at a cost of \$25,000,000. As pointed out editorially in the last number of AMERICAN FORESTS, the American elm will be safe from the Dutch elm disease, over which the control agencies are just beginning to get the upper-hand, only if adequate funds to

continue eradication work are forthcoming. The Budget reduction, therefore, can be viewed only as misplaced economy that may render past expenditures of no avail and may cost the nation its most beautiful and valuable shade tree.

Appropriation estimates for the administration of the national forests are comparable with those of the present year. A new item of \$148,500 has been included, however, to make possible more adequate management of national forest timber sales. Other Service activities, such as research, including the Forest Products Laboratory, reforestation, timber survey, and private forestry cooperation, are budgeted on substantially the same scale as current year expenditures.

The total appropriation recommended for the Soil Conservation Service is \$20,543,684—an increase of \$1,750,000 over the current year. This increase, the Budget states, is to provide expanding cooperation with soil conservation districts. In addition, \$2,250,000 is provided for soil conservation by the Department of the Interior, which this year was given jurisdiction of that work on public lands under its administration.

Other conservation agencies in the De-

CONSERVATION IN THE 1942 BUDGET

Appropriation and Project	1942 Estimate	1941 Appropriation
Department of Agriculture		
Forest Service	\$18,626,955	\$18,047,955
General Administrative Expenses	598,520	598,520
National Forest Protection and Management	10,986,000	11,500,000
Fighting Forest Fires	100,000	100,000
Private Forestry Cooperation	98,000	100,000
Research—Forest Management	605,000	605,000
Range Investigations	270,935	270,935
Forest Products	632,500	632,500
Forest Survey	247,000	250,000
Forest Economics	140,000	140,000
Forest Influences	135,000	135,000
Forest Fire Cooperation	2,490,000	2,200,000
New England Hurricane Damages		300,000
Acquisition of Lands for National Forests	1,988,000	1,000,000
Acquisition of Lands from Receipt Funds	316,000	71,000
Soil Conservation Service	20,543,684	18,792,540
Miscellaneous—Department of Agriculture		
Cooperative Farm Forestry	400,000	400,000
Includes:		
Extension Service	\$107,000	
Forest Service	159,901	
Soil Conservation Service	133,099	
Dutch Elm Disease	300,000	400,000
White Pine Blister Rust Control	1,409,000	400,000
Includes:		
Bureau of Entomology and Plant Quarantine	\$500,000	
Forest Service	694,000	
Department of Interior	215,000	
Gypsy and Brown-Tail Moth	375,000	375,000
Forest Insects—Studies and Control	212,500	212,500
Diseases of Forest Trees	245,000	245,000
National Arboretum	54,587	54,587
Naval Stores Investigations	92,400	93,400
Department of the Interior		
Fish and Wildlife Service	9,018,675	8,600,418
National Park Service	5,181,380	4,964,280
Grazing Service	1,100,000	1,000,000
Soil Conservation—Public Lands	2,250,000	
O and C Lands	200,000	150,000
Prevention of Fires in Alaska	27,000	27,000
Indian Forests:		
General Administration	385,000	398,640
Sale of Timber	117,000	117,000
Suppression of Forest Fires	15,000	45,000
General Public Works		
Roads and Trails—Forest Service	9,955,500	9,000,000
Roads and Trails—National Park Service	3,000,000	2,125,000
Memorial Parkways	6,000,000	2,000,000
Civilian Conservation Corps	270,000,000	279,994,900
Tennessee Valley Authority (Forestry, Wildlife, and Recreational Development)	606,000	660,000

partment of Interior appear to have fared equally as well as those in Agriculture. Operation of the National Park Service is estimated at \$5,181,380—an increase of \$217,000. The increase is to meet increased administrative costs of the parks and to provide \$75,000 for the United States Travel Bureau. An increase of almost a million dollars is also provided for roads and trails in the national parks, while the recommended appropriation for continued construction of the Blue Ridge, Natchez Trace, and George Washington Memorial Parkways is \$6,000,000, as against \$2,000,000 for the current year.

For the new Fish and Wildlife Service, which is a merger of the Biological Survey and the Bureau of Fisheries transferred July 1 last to the Interior Department from Agriculture and Commerce, respectively, the 1942 estimate is slightly over \$9,000,000—an increase of \$418,000. An increase of \$100,000 is provided for the Grazing Service, bringing that agency's appropriation up to \$1,100,000. Administration of O and C lands in Oregon is placed at \$200,000—an increase of \$50,000.

As opposed to the above increases, the new budget cuts the Civilian Conservation Corps by \$10,000,000, setting its 1942 costs at \$270,000,000. If this cut is sustained by Congress, it will be necessary for the Corps next year to reduce its number of camps from 1,500 to 1,400 and enrollments from 300,000 to 281,000 men.

In addition to the new Budget, the first week of the 77th Congress, which began on January 3, was marked by the intro-

duction of a host of conservation measures. Most of them, however, were previously pending bills which died with the expiration of the 76th Congress. Among the more important bills reintroduced up to the time this issue went to press and as newly numbered are: S. 156 (Holman and Wallgren) to restrict the exportation of certain Douglas fir peeler logs and Port Orford cedar; S. 260 (Hayden) to permit mining within the Organ Pipe Cactus National Monument in Arizona; H. R. 1063 (Murdock) to provide for the establishment of the Coronado International Monument in Arizona; H. R. 615 (Pierce) to safeguard and preserve the public interest in the timber resources of the States of Oregon and Washington; H. R. 572 (Doxey) to promote sustained-yield forest management; H. R. 969 (Fulmer) to authorize the Secretary of Agriculture to enter into cooperative agreements or leases with farmers and owners of forest lands to provide for their management in accordance with proper forestry practices; H. J. Res. 15 (Fulmer) to investigate the purchasing of pulpwood by pulp and paper mills under a contract purchasing system from farmers.

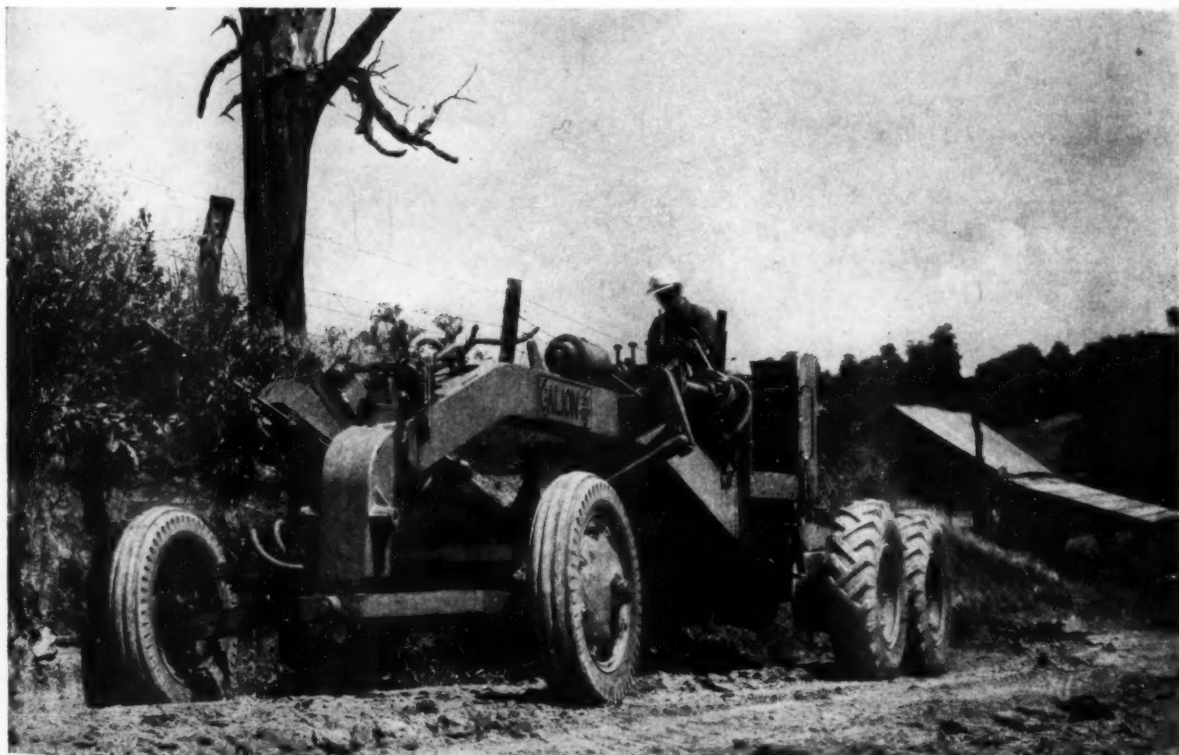
Neither the Barkley bill carrying the Mundt amendment to create a Division of Water Pollution Control in the Public Health Service, nor the DeRouen bill to amend the American Antiquities Act have been reintroduced. Representative Spence of Kentucky, however, reintroduced, on January 3, his pollution control bill.



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Yellow Pine	Sugar Maple
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CONSERVATION CALENDAR

Important Bills in Congress, with Action
January 3 to 13, 1941

APPROPRIATIONS

S. 4—McCARRAN—Making an appropriation to provide for the acquisition of certain lands for addition to the Tahoe National Forest in Nevada. Introduced January 6. Referred to the Committee on Appropriations.

CONSERVATION

H. R. 99—FULMER—To provide for forest conservation of timber used in pulp, etc. Introduced January 6. Referred to the Committee on Agriculture.

FISH AND WILDLIFE

S. 299—WHEELER—To amend the act providing for federal aid to the states in the establishment of wildlife-restoration projects, etc. Introduced January 10. Referred to the Committee on Agriculture and Forestry.

FORESTRY

S. 156—HOLMAN AND WALLGREN (H. R. 1804—COFFEE)—To restrict the exportation of certain Douglas fir peeler logs and Port Orford cedar logs. Introduced January 6. Referred to the Committee on Finance.

H. R. 572—DOXEY—To promote sustained-yield forest management. Introduced January 3. Referred to the Committee on Agriculture.

H. R. 615—PIERCE—To safeguard and preserve the public interest in the timber resources of the States of Oregon and Washington. Introduced January 3. Referred to the Committee on Agriculture.

H. R. 969—FULMER—To authorize the Secretary of Agriculture to enter into cooperative agreements or leases with farmers and the owners of forest lands in order to provide for their management in accordance with proper forestry practices. Introduced January 3. Referred to the Committee on Agriculture.

GOVERNMENTAL FUNCTIONS

H. J. RES. 15—FULMER—To investigate the apparent monopolistic purchasing of pulpwood by pulp and paper mills, etc. Introduced January 3. Referred to the Committee on Agriculture.

H. R. 1002—RANDOLPH—To amend the Civilian Conservation Corps Act to provide instruction in military tactics and drill for enrollees.

GRAZING

H. R. 1596—ENGLEBRIGHT—To authorize the establishment and maintenance of an experimental range in California for conducting research in the management of range lands for sheep grazing. Introduced January 8. Referred to the Committee on Agriculture.

INSECTS AND TREE DISEASES

H. R. 1597—ENGLEBRIGHT—To enable the Secretary of Agriculture to control

emergency insect infestations on the national forests. Introduced January 8. Referred to the Committee on Agriculture.

LANDS

H. R. 957—ANGELL—To authorize the acquisition of forest lands adjacent to and over which highways, roads, or trails are constructed or to be constructed wholly or partially with federal funds in order to preserve or restore their natural beauty. Introduced January 3. Referred to the Committee on Agriculture.

NATIONAL FORESTS

S. 3—McCARRAN—To provide for the use of 10 per cent of the receipts from national forests for the making of range improvements within such forests. Introduced January 6. Referred to the Committee on Agriculture and Forestry.

NATIONAL MONUMENTS

S. 260—HAYDEN—To permit mining within the Organ Pipe Cactus National Monument in Arizona. Introduced January 8. Referred to the Committee on Public Lands and Surveys.

H. R. 1063—MURDOCK—To provide for the establishment of the Coronado International Monument in Arizona. Introduced January 3. Referred to the Committee on the Public Lands.

NATIONAL PARKS

S. 257—HAYDEN—To authorize the participation of states in certain revenues from national parks, national monuments, and other areas under the administration of the National Park Service. Introduced January 8. Referred to the Committee on Public Lands and Surveys.

PUBLIC DOMAIN

H. R. 539—COLMER—To revise the method of determining the payments to be made by the United States to the several states with respect to conservation lands subject to the jurisdiction of the Department of Agriculture. Introduced January 3. Referred to the Committee on Agriculture.

WATER AND STREAM CONTROL

H. R. 1110—SPENCE—To create a Division of Water Pollution Control in the United States Public Health Service. Introduced January 3. Referred to the Committee on Rivers and Harbors.

MISCELLANEOUS

H. R. 955—ANGELL—To amend the Merchant Marine Act of 1936, as amended, to provide for extending aid to producers of lumber and manufactured timber products. Introduced January 3. Referred to the Committee on the Merchant Marine and Fisheries.

SCIENCE AND EQUIPMENT

"JOB-RATED" TRUCKS

Dodge division of Chrysler Corporation has introduced job-rated trucks in the 112 standard chassis and body models, eighteen different wheelbase lengths and six capacities ranging from 1/2-ton commercial units to heavy-duty gasoline and diesel units.

These trucks are equipped with sealed-beam headlights, oil-bath air cleaners and metal-edge fuel filters are mounted at engine carburetors. All 1/2-ton, 3/4-ton and 1-ton models have a new synchro-shift transmission.

Tires with thicker and flatter treads have been provided for the 1 1/2-ton, 2-ton and heavy-duty gasoline and diesel models. Operator cabs have been redesigned to provide greater durability and driver comfort.

TRACTOR MOUNTED PUMP

The Cleveland Tractor Company is now in a position to equip Cletracs with the Deming Pump, a self-propelled unit which permits locating the pump near the source of the water supply. It has real possibilities for fire fighting purposes, for irrigation and for use any place that a temporary source of water is required under pressure.

The Deming Pump is particularly adapted to tractor mounting. It has a single suction with a semi-open impeller which makes it particularly suitable for handling dirty water without premature wear on the pump. It is now available in two models.

RADIO FOR PARACHUTE FIRE-FIGHTERS

A new lightweight radio for parachuting fire-fighters is being used on the national forests for the first time this year. Tests made by the Forest Service indicated the practicability of dropping fire fighters from airplanes to put out small fires in some of the inaccessible back-country areas. The new radiophone has been developed so that the "smoke-jumper" can keep in touch with the plane pilot and with his headquarters when he reaches the ground. The smoke-jumpers use a specially designed parachute which has a rate of descent of about twelve feet per second and permits a certain amount of steering toward the landing spot. The small type radiophone weighs only six pounds.

AUTOMOBILE AIR CONDITIONING

Winter sports owe much of their remarkable ascendancy to the automobile industry. Roads are better; winter driving is safer than ever before; skiing, tobogganing, skating and scenic beauty spots are much more accessible; and, to top it all, winter sports enthusiasts can have their fun in thorough comfort because of new automotive advancements.

Among these developments is the Nash

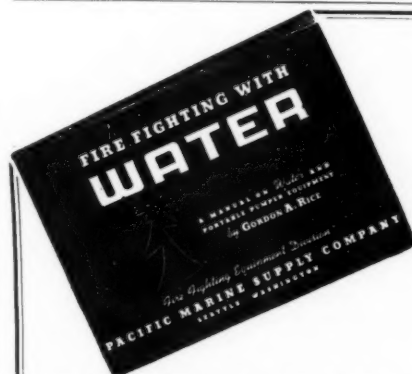
"Weather Eye" system of conditioning air for winter motoring. Graduated this year into a full-fledged system of pressure ventilation and heating, the "Weather Eye" brings fresh air into the car under pressure, warms it to a selected temperature as it enters, and keeps the interior of the car at the desired comfort level by thermostatic control.

Advantages of the system are said to be thorough elimination of dangerous fumes, such as carbon monoxide; uniform heat throughout the car; complete elimination of foggy and frosted windows; and a constant, spring-like quality to the atmosphere within the car.

REMINGTON CHRONOSCOPE

Split seconds that are ages to a bullet or a camera shutter are measured as easily as a wrist watch measures the time of day by a new device called a chronoscope, developed by the research division of the Remington Arms Company. The device, built into a small portable cabinet, splits the second 1,000 ways and will measure from one up to 200 of these milliseconds with less than one per cent error.

It has already proved valuable for studying the effect of velocity and flight time of bullets on accuracy, range, trajectory, and hitting power, but its use is not confined to ballistics. Many of the most important operations in science and industry are performed in much less time than is needed for the flick of an eyelash. Any of these can be clocked with the chronoscope providing only that an electrical impulse can be obtained at the beginning and end of the event.



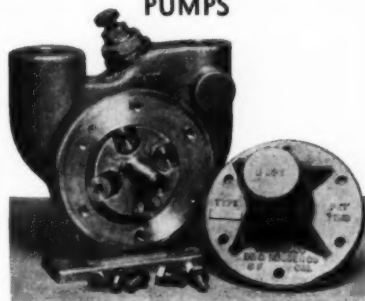
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A street with a future, and a good example of fitting species to environment. These young pin oaks are showing symmetrical, even growth

YOUR SHADE TREES

PLANNING BEFORE PLANTING

BY ARTHUR B. WILLIAMS

IN A recent survey of the street trees of Cleveland, Ohio, the astonishing total of 105 different species of trees was reported growing on the tree-lawns of this great industrial city. On its face this would seem to indicate a city policy of broad diversity of tree planting, as well as a surprising number of species found to be tolerant of city conditions.

But such is not really the case. A study of the totals within the species groups discloses the fact that 97.7 per cent of the entire number of these city trees are confined to a list of twenty-one species; and that within this list of twenty-one, over eighty per cent of the trees represent six species only—silver maple, sycamore,—largely London plane tree—elm, Norway maple, catalpa and ailanthus. Furthermore, approximately fifty per cent of the

list of twenty-one are either silver maples, sycamores, Carolina poplars, or catalpas—all of which might readily be classified as undesirable trees for city use.

As to the remaining eighty-four species reported, representing 2.3 per cent of all city trees, it appears from a scanning of the list that a large proportion of them must represent either the whims of property owners who have taken the planting of their own tree-lawns into their own hands; the accidental occurrence due to the chance scattering of seeds by winds or by birds; or the survival of a few orchard or woodland species that occupied the ground before the street was laid out, rather than the careful selection and planting by an expert who had the needs of the city as a whole in mind, and who knew the qualities and requirements of

the materials with which he had to work.

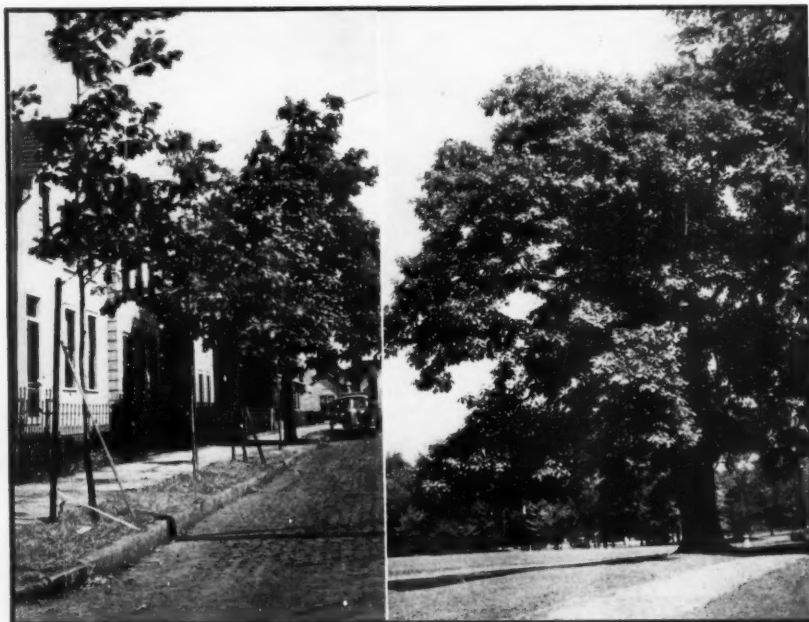
All of this seems to indicate a degree of neglect and indifference with reference to the city's trees over a considerable period of years that is truly amazing. Varying city administrations and the lack of available funds from time to time in the past cannot be assigned the entire burden of the blame; although the leadership which citizens have the right to expect from those in positions of public responsibility has apparently been at a very low ebb, so far as the city's forestry needs were concerned.

Fundamentally, of course, the blame rests upon the people who live in the city, who have complacently allowed the conditions to go unchallenged and unchecked from one year to another, apparently quite indifferent as to whether the city had a real forestry program or not. It does not sound well, but it must be said that lack of appreciation of what fine trees may mean to a city or a neighborhood, and lack of vision with reference to future developments have characterized the citizens as a whole with reference to this finer aspect of the city's life.

Trees advertise the city, and in this case the advertising is the wrong way up. A difficult and an expensive task now will face the person who some day will be called upon to head the city's Bureau of Forestry—a piece of organization that at the present time does not even have a paper existence—and an office that has had no incumbent for fully six years.

As a result of this lack of a planned forestry program for the city as a whole what does Cleveland now face?

When the spirit of neglect and indifference ceases to be the rule, as undoubtedly some day will be the case, it is apparent that a vast replacement policy must be put into operation which in many ways will be as baffling as the traditional "chinese puzzle." It will also be a difficult piece of social engineering because of lack of understanding of its significance on the part of the people. It will involve a considerable outlay in money that should have been distributed over many previous years.



And a street with no future—with complete lack of plan, for the young red oaks should never have been placed on this narrow tree-lawn on a narrow street. At the right is a well grown red oak, properly planted with room for its spreading beauty

To what extent conditions such as those that characterize Cleveland at present may be found in other American cities is an open question. This article is written with the idea of calling attention to the fact that inadequate planning before planting trees along city streets is a foolish waste of time and money—of time, because the years that we have the right to expect will be producing fine city trees are given over to the growing of a crop of trees many of which must eventually be treated as weeds and removed to make way for better—of money, because the substitution of new trees for old on a wholesale scale will of necessity be an expensive matter.

Obviously every large city deserves a master-plan for its forestry program that shall be both inclusive and discriminating in character. Without such a plan, such planting as may be done is bound to be haphazard and without hope of making any real contribution to the future. An ideal plan, once set up on the basis of careful study of all the factors of success or failure involved, can be continually held in mind, and each year's work made to yield its contribution to the final result. Such a plan, if boldly conceived and presented, should win to its support many varying civic groups and thus escape the oblivion to which many a lesser ideal might be consigned.

The elements of good city tree-planting would seem to be included within two broad fields of knowledge. First—knowledge of the environmental conditions in which the city tree in a particular city must make its bid for life and growth and a long-term place in the sun. Such things as climate, character of the soil,—which may vary widely in different sections of the same city—amount of soot-fall, direction of prevailing winds, character of streets and width of tree-lawns, presence of overhead wires and underground mains and conduits, and character of buildings which will become the companions of the trees, all are factors in the environment to be understood and taken into account.

On the basis of such information the city may be divided intelligently into definite habitat zones which are more or less constant as to environmental conditions within their limits. Each of these areas thus becomes a separate unit of development when species and treatment are being considered.

Second,—knowledge as to the characteristics and requirements of the various species of trees which may reasonably be expected to make a success of life within the environments which the particular city affords. To start with, this may be quite a long list, but when one considers desirable qualities against undesirable, the list is considerably shortened.

Trees should not be selected for city use either because they are cheap or because they happen to be easily obtained. It is just that sort of policy, or lack of policy, that has made of certain parts of Cleveland a welter of sprawling silver maples.

Qualities to be sought after are such things as production of satisfactory shade, symmetry and beauty of form, hardness, relative immunity to disease or insect at-

tack, cleanliness, adaptability after transplanting, and good expectation of long life. For particular streets, ultimate size and character of growth-forms need careful consideration. Probably no single species combines all the qualities desired, but it is the task of the city tree-planter to select those species for planting which seem most nearly to fill the need of the master-plan. Often judgment as to what species is best adapted to a particular habitat zone must be based on experience and experiment rather than upon theoretical or "book" knowledge. Certainly it needs a man of a high degree of training and experience to develop a comprehensive, long-range program for the forestry needs of a really large city.

Finally, the problem of actually putting the master-plan into effect boils down to the skillful fitting of trees to environment with an eye to future effect—the tree of best character and quality in the particular environmental niche where it will best serve its city over a long period of years. It goes without saying that good technique in transplanting and in subsequent care are essential to ultimate success.

Uniformity of planting is desirable in small units. A street of varying species, types and growth forms never makes a pleasing picture. Because of its unkempt appearance it might well be designated as a "hobo" street,—and most large cities have many such hobo streets. Usually they cause little comment. It is the street of uniform, well-pruned trees that causes comment because of its instant appeal as a thing of beauty. Every street should be accorded its own particular treatment, and variety can be secured by varying the species-list for different streets.

Diversification in planting is as desirable as uniformity. A city all elms, or all maples misses the mark. Usually there is no need to limit the number of species to a very few.

Nor should we feel that the present environment is irrevocably fixed. It may be capable of being changed for the better. All land does not have to be sacrificed to utility. The battle against smoke will not always be a losing one. Poles and overhead wires can gradually be banished from the tree-lawns.

With the possibility of only one or two exceptions, so far as the writer knows, no American city can at the present time lay claim to a well developed plan of tree planting—one that is already in operation and that has had continuity over a sufficient number of years to show substantial results. If this statement is true, isn't it about time that local pride in fine city trees should arouse enough interest to start something in the way of rivalry among cities that will produce a few good examples of long-range plans in successful operation?



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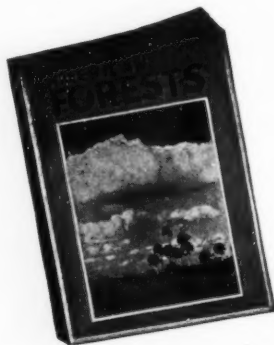
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Fire Medals Awarded

The Forest Fire Medal for heroism in fire fighting was awarded to two former members of the Civilian Conservation Corps on December 20 at Washington, D. C., on the occasion of the 40th Annual Meeting of the Society of American Foresters. They were Ernest R. Tippin, of Kansas, assistant leader, and Walter James, of New York, CCC Camp F-5, in Nevada. Both awards were posthumous.

Enrollees Tippin and James, with three others, lost their lives in the Rock Creek fire of July 28, 1939, on the Toiyabe National Forest, Nevada. In the face of a racing sagebrush fire, these two young

men turned back to help another enrollee who had fallen with a fractured ankle. For this act of personal bravery and heroism, in which they lost their lives, the Forest Fire Medal was awarded.

The Forest Fire Medals are awarded by the American Forest Fire Medal Board, which consists of a representative of each of the following organizations: the American Forestry Association, the Society of American Foresters, the Charles Lathrop Pack Forestry Foundation, the Association of State Foresters, and the National Lumber Manufacturers' Association.

Association Elects New Officers

Members of The American Forestry Association by letter ballot during December elected the following new officers: W. S. Rosecrans, of Los Angeles, California, president, to succeed James G. K. McClure, of Asheville, North Carolina; to the Board of Directors, James G. K. McClure, retiring president, to succeed P. R. Camp, of Franklin, Virginia, and C. P. Wilber, director of conservation of New Jersey, to succeed F. W. Besley, state forester of Maryland.

Vice-presidents elected for 1941 were David A. Aylward, Massachusetts, president, National Wildlife Federation; J. H. Allen, Georgia, president, Southern Pulpwood Conservation Association; David Beals, Missouri, vice-president, The Interstate National Bank; Homer Chaillaux, Indiana, director, Americanism Commission of the American Legion; Mrs. Saidie Orr Dunbar, District of Columbia, president, General Federation of Women's Clubs; Tom Gill, District of Columbia, secretary, Charles Lathrop Pack Forestry

Foundation; Tappan Gregory, Illinois, president, Izaak Walton League of America; Dr. Charles E. Holzer, Ohio, president, Ohio Valley Flood Control Congress; Ed. J. Hughes, Oregon, president, Federation of Western Outdoor Clubs; George F. Jewett, Idaho, president, Western Forestry and Conservation Association; C. F. Korstian, North Carolina, president, Society of American Foresters; Irving H. Larom, Wyoming, president, Dude Ranchers' Association; Aldo Leopold, Wisconsin, Wilderness Society; Lessing J. Rosenwald, Pennsylvania, chairman, Rosenwald Fund; Mrs. Samuel Seabury, New York, president, Garden Club of America; James J. Storrow, Massachusetts, Society for the Protection of New Hampshire Forests; Francis D. Tappan, California, president, Sierra Club; Mrs. Frederick A. Wallis, Kentucky, president, National Council of State Garden Clubs; H. W. Whited, Texas, president, Texas Forestry Association; and John G. Winant, New Hampshire, National Recreation Association.

Forestry at Forty

(Continued from page 83)

not been as assiduous in exploring the financial possibilities of forestry as in urging its adoption. A change in attitude, and action, on the part of both groups is urgently needed.

It is hardly an accident that at a meeting where the whole problem of private forestry was so much to the fore only two papers dealt specifically with ways and means of making it more profitable. This indicates the lack of attention now being paid to this important aspect of forest management. It also emphasizes the need for investigations by timberland owners and foresters alike of the possibilities of increasing returns and decreasing costs of growing and harvesting the forest and of manufacturing and marketing its products. Here is a field that offers not only a stimulating challenge to all concerned with the problem of the private owner but the most promising means of solving that problem.

Since the profession of forestry came into existence in 1900 it has given an excellent account of itself, particularly in the advancement of public forestry. The

more important and more difficult task of placing the privately owned forest lands of the country under effective management still lies ahead. If it can be handled successfully, it may well prove that forestry begins at forty.

CORRECTION

On page 557 of the December issue of AMERICAN FORESTS it was stated that a Convention on nature protection and wildlife preservation had been ratified by seven Latin American governments and the United States. Furthermore, it was stated that the Convention would become effective on January 12, 1941.

Both of these statements are in error. Seven Latin American governments and the United States signed the Convention, but no government has as yet ratified it. And since the Convention will not come into force until three months after five governments have ratified it, it is obvious that it did not become effective January 12. AMERICAN FORESTS is sorry for this misinterpretation of the Convention.

NEW BOOKS

NATURE RECREATION, by William Gould Vinal. Published by the McGraw-Hill Book Company. 322 pages, ills. Price \$3.00.

Here is a complete guide for the nature enthusiast, teacher, and group leader in nature education. Every phase of the field is included—games, hikes in the woods, gardening, community programs, summer camp activities, protection of wildlife, forest conservation, etc. Mr. Vinal, who is an authority on the subject of outdoor recreation, presents his knowledge and experiences in the pursuit of both the esthetic and practical qualities of nature so that others may derive the full benefit from nature's playgrounds.

The book is prepared in the form of a text and includes an index for ready reference.

ILLUSTRATED FLORA OF THE PACIFIC STATES, by LeRoy Abrams. Published by Stanford University Press, Stanford University, Calif. 538 pages, ills. Price \$7.50.

This first of four volumes of the second printing of a monumental work covers the field from ferns to birthworts and is designed to be of the greatest service not only to the trained botanist but to everyone interested in the plant life of the Pacific States. Every species of fern, flower, tree and shrub known to grow wild in the region is illustrated and described. The distinguished author, who has devoted forty years to the botany of Western North America, is professor of botany at Stanford University.

SOIL EROSION AND ITS CONTROL, by Quincy Claude Ayres. Published by McGraw-Hill Book Company, New York City. 365 pages, ills. Price \$3.50.

A technical treatise on erosion control, designed for the use of students in college and vocational agricultural courses, county agents, farmers, engineers and others interested in the elimination of soil wastage, this book is a valuable contribution to the rapidly growing literature on a subject of national importance. Its author, distinguished for his work in engineering as affecting conservation and agriculture especially, and attached to the teaching staff of Iowa State College, here brings together and correlates, under one cover, many phases of this complex problem with the quantitative application of all present-known data. While research

has gone far, much yet remains to be determined regarding the relative values of various control methods and in order to assure a complete presentation to date, the author has canvassed all available data and drawn upon many authentic sources of authoritative information.

FORESTRY AND STATE CONTROL, by R. S. Troup. Published by the Oxford University Press, New York City. Eighty-seven pages. Price \$1.35.

This is a study of forest practices in England and many other European countries before the present war and should serve as a guide to those nations desiring to introduce forest control measures or improve upon the ones already employed.

BACKWOODSMEN, by George Clinton Arthur. Published by The Christopher Publishing House, Boston, Massachusetts. 99 pages. Price \$1.50.

This is an authentic history of the Ozark Mountains country of Missouri colored with events in the lives of several pioneers as recounted to the author by themselves. Told in a simple, unsophisticated style which grows upon the reader, the first pages deal with the beginnings of Ozark civilization in the days when the only industry was lumbering, continuing with the pioneer stories, and coming up to modern times.

THE WILDERNESS LIVES AGAIN, by Mary L. Jobe Akeley. Published by Dodd, Mead & Company, New York City. 411 pages, ills. Price, \$3.00.

In the New York Museum of Natural History is a monumental exhibit, the culmination of the dreams of an American boy, who was destined to become one of the world's greatest taxidermists. Here, in African Hall, we stand before those wild animals which come to life again in the reproductions of their native habitats—alive for us because the late Carl Akeley's dreams became dramatic adventures, leading him many times into darkest Africa on his hunts for great mammals. And, because he was also an artist capable of depicting and preserving wildlife, we see them as they were first encountered by him.

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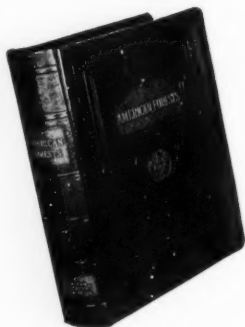
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Tree Planting Under 1941 AAA Farm Program

FIVE methods whereby farmers may earn AAA payments through forestry practices are included in the agricultural conservation program for 1941. The 1941 program further stimulates tree planting by farmers by providing payment of \$15 a farm, in addition to regular soil building allowances, for the planting of forest trees.

The five methods outlined by the AAA are:

1. Cultivating, protecting, and maintaining, by replanting if necessary, a good stand of forest trees, or a mixture of forest trees and shrubs suitable for wildlife, planted between July 1, 1937, and July 1, 1941—\$3.00 an acre. (Payment will not be made for this practice in the case of trees for which payment is made for planting under the 1941 program.)

2. With prior approval of the county committee, improving a stand of forest trees under such approved system of farm woodlot and wildlife management as is specified by the Agricultural Adjustment Administration—\$3.00 an acre.

3. Planting forest tree seedlings (including shrubs beneficial to wildlife) or forest tree nuts, provided such trees or shrubs are protected from fire and grazing and cultivated in accordance with good tree culture and wildlife management practice—\$7.50 an acre.

4. Farm woodland fire protection by the construction of firebreaks—ten cents per 100 linear feet of firebreak constructed. In order to qualify under this practice the woodland must be protected from burning during the year for which payment is made and must be protected from adjoining grassland or woodland by a barrier to fire which may be (a) a fire-

break at least six feet wide cleared of all inflammable material to mineral soil or (b) a natural barrier such as a road or stream. Woodland areas must be divided into blocks of not more than twenty acres each by a firebreak. No payment shall be made under this practice where controlled burning is practiced. (Woodland areas qualifying for payment under other practices stated here and under the Naval Stores Conservation Program will not qualify under this practice.)

5. Restoration of farm woodlots, normally overgrazed, by non-grazing and fire protection during the entire 1941 program year (credit will not be allowed for more than two acres of woodland for each animal unit normally grazed on such woodland)—thirty-five cents an acre. (These rates are the maximum and will vary among the states.)

AAA records show that from 1936 through 1939, farmers planted approximately 181,000 acres of trees as a farm program practice. Officials state that conservation payments made to farmers for planting trees have been "100 per cent effective." In other words, the 181,000 acres of trees planted under the program from 1936 through 1939 might never have been planted without this stimulus. They state this is a higher degree of effectiveness than results from payments made for any other conservation practice.

Every farmer who cooperates with the AAA farm program has a soil-building allowance set up for his farm, and may earn a portion or all of it by planting trees or carrying out forest tree improvement practices. Besides forest tree practices he has a number of other good-farming practices available for earning the allowance.

Miracle Maker of the Rangeland

(Continued from page 66)

and tabosa, and over there I discovered a scattering of sacaton. Of course that was much better than snakeweed, but I wanted something better. It's funny, isn't it, how Nature fights to protect her own? If you strip the earth of the best, she brings out something else not so good. Then if that is taken, she uses something less attractive until she finally gets plants that even a goat wouldn't eat. It's her last attempt to hold the land. Those University fellows told me that it takes from five hundred to a thousand years to make an inch of good soil. If it's left bare, one big flood takes it off in a few minutes. That's why I'm working so hard to get every foot of this land covered with some sort of vegetation."

He chopped furiously for a few minutes. Through the long years he had taken out the weeds and noxious plants, a few at a time, to facilitate the coming of better ones. He had never been able to reseed, but by taking out a weed here and

another there, and by forking up the hard earth he prepared the soil for grass seeds dropped by the wind. Gradually a little black grama, some hairy grama, and blue grama had appeared on the low ridges. Sacaton had begun to spread over the low places. In the arroyos and on the bare, eroding slopes vine mesquite got a foothold. Its long stolons, spreading flat over the earth, traveled rapidly, taking root as it went. As a soil binder it was a magnificent weapon with which to combat erosion. Then, too, it caught debris and litter in its thick mat, thus speeding up the process of soil building.

Where this process had advanced, the vine mesquite, having done its part in Nature's scheme, was being succeeded by a better forage plant, the curly mesquite. Mr. Page was delighted one day to discover bush muhly pushing its way up through clumps of cactus and rabbit brush. It was even coming up among the young mesquite trees. Oh, it was a good range plant, this muhly, one of the great-

est predators in the plant kingdom. It would choke out the thick brush that had fulfilled its destiny by holding the earth against erosion until such time as the better plants could establish themselves. Giant sacaton nearly head-high was taking the place of the smaller varieties, and in the low places where sufficient water accumulated, tall Johnson grass waved. Around the little house, native plants had been used for decorative purposes, the soft grays and greens of their foliage making pleasing contrasts. The drive was bordered with desert shrubs neatly clipped to form a hedge. Mr. Page looked over his place and his heart was full.

"Think what it would mean to the state and to the nation if all the ranges looked like this. It would probably mean no more

sales for delinquent taxes, it would mean increased public revenues and prosperity for individuals."

John Timothy Page had never for one moment regretted that he chose the hard way. Recently his dream for the half section was fulfilled. The University of Arizona, as well as other state and federal agencies, became keenly interested in it as a demonstration of plant succession in the rehabilitation of range land. Recognizing it as a definite contribution to science, a philanthropic friend of the University bought the place and presented it to the institution which, in cooperation with these other agencies, will continue the work begun seventeen years ago by an old man with vision and a deep love for the land in his heart.

Fight for the Woodland Caribou

(Continued from page 57)

then coated with paraffin, the animals were apt to approach within a few feet and, even though on the run, turn out abruptly, go around the snare, and again return to the trail. It was necessary to change location of sets several times during the period of trapping to meet changing snow and water conditions.

An attempt was made to capture the animals by the pit-fall method. A pit was dug in a much used trail and camouflaged carefully, but the animals avoided it. The water table was close to the surface in swamps and for that reason pits were not considered very practicable.

Because of the limitation of the time within which money could be spent on this enterprise, no attempts were made later in the season to capture animals swimming in the lakes. In late summer caribou are often seen swimming from island to island where they might be approached by canoe and roped. The Indians suggested this method of capture.

By persistent effort two mature caribou were obtained as a result of the snaring operations. In order to fill our quota of ten animals we decided therefore to have the Indians pick up eight calves, which they did later in the spring.

It is of interest to note that eighteen caribou entered the snares. Of this number eleven escaped and three were released by the trappers because of fear of the enraged animals or through a misunder-

standing of the sex desired. One fine animal was lost when the trapper's dogs preceded him and injured the captive animal beyond hope of recovery. Still another casualty occurred when a cow was fatally injured by improper handling during transportation.

The largest animal, a male, weighed approximately 350 pounds. He was transported by means of dog team and travois, a vehicle constructed by lashing two small poles together in such a way that the front can be placed over the back of a horse with the rather long poles trailing on either side. In their middle section these support a platform on which a load may be placed. This caribou was tied loosely and placed on his side with all feet extended though fastened securely by means of a soft rope. The head, too, was tied down to prevent injury.

Upon arriving at Montreal Lake, the animal was placed in a large crate and within a few hours was induced to eat mosses and lichens. During the first night he attempted to escape by lunging against the top of the crate. After this attempt he quieted down and gave little trouble during the remainder of his captivity. The crate was sufficiently large to permit him to lie down at will and even turn around, because Mr. Manweiler's observations had indicated that at least one-half of the time of caribou in the wild is spent lying down.

The large male, upon arriving at Lud-

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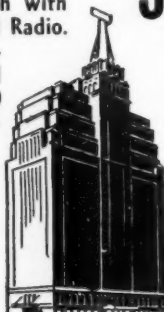
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low Island, was placed in a corral and quickly became reconciled to his surroundings, though he could never be approached with safety. After six months of captivity, during which time he showed every evidence of being in healthy condition, he was transported by caterpillar tractor through twelve miles of swamp country and, on August 19, 1938, released within an enclosure of four square miles of bog and spruce swamp. The fence around this enclosure is constructed of seven strands of barbed wire and is seven feet high. He was allowed to range under observation until the first part of October, at which time he was liberated to join the three native cows that were in the vicinity.

The next time this animal was seen was in February, 1939, nearly a year from the date of capture. He was still ranging with the native cows and it is hoped that there may have been one or two calves produced in the spring of 1939. It has not been possible to keep close track of the little band in such a remote and difficult district. However, the big bull was again sighted in June, 1940. He was with one of the old native cows and, from the behavior of the cow, it is believed that she had a calf cached in the bushes nearby.

The seven imported calves did exceptionally well in captivity, a result for which Mr. Manweiler deserves much credit. The calves weighed approximately twenty-two pounds each when captured; a year later they averaged about 200 pounds. They received the best of care, as evidenced by their rapid growth and fine condition, and seemed well able to fare for themselves.

The chief foods of the woodland caribou consist of mosses, lichens, and a rather restricted variety of browse and succulent plants. The seven calves, while held in the corral at Ludlow Island, consumed a good deal of reindeer moss and oatmeal and almost a case of milk a day. They refused hay and other plant materials that were foreign to them in their natural habitat. They were given minerals regularly which accounts, in part, for their rapid growth. Their senses of taste and smell are very keen. It was impossible to get them to take any brand of milk other than that first fed them and to which they had become accustomed. Even the addition of one tablespoonful of a different brand to

a cup of milk was sufficient to cause refusal.

For a year the animals were kept in a corral and a small pasture guarded by watchmen and protected by electrified fences, and were later transferred to the large swamp pasture for the breeding season of 1939. From there they will be liberated, later on, and it is hoped that they will join the few remaining native woodland caribou.

Of the ten animals brought in by the Cree Indians to the Hudson's Bay Company post at Montreal Lake, transported by truck to Prince Albert and sent by express to Baudette, Minnesota, one died after reaching Baudette. The remaining nine were taken out to the west end of Ludlow Island in the big swamp north of Red Lake and inside the Red Lake Refuge.

So far the caribou venture has been successful. The animals brought in are doing exceptionally well. Not only have they remained in good health, thanks to the care of Mr. Manweiler, but there has been an increase in the population. At least three and possibly four of the female calves obtained in 1938 gave birth to calves this spring. Evidently the female caribou are bred when they are less than a year and a half old.

It is encouraging to see the caribou increasing under the conditions now existing in the Beltrami project area. As has been shown in the case of most successful stocking experiments with either big game or game birds, it is advisable to obtain and liberate some more of the animals a year or two after the first attempt at stocking. That is strongly recommended. We have been hoping to obtain additional animals and I now have a permit from the Province of Saskatchewan authorizing the taking of ten more caribou. The cost would be little, since the methods and procedure have been worked out; the Indians are now experienced in catching the animals; the territory where the caribou can be captured is well known; and the fence enclosing the big "pasture" in the Minnesota bog has been built.

The extinction of woodland caribou in this country has been averted for the present, but by the narrowest margin. We are in a fair way to preserve to Minnesota and to the United States at least some of the blood strain of our native caribou.

New Venture in Farm Forestry

(Continued from page 80)

greet the visitor with a statement like this: "I deal with a lot of farmers, most of whom own a tract of fair to good woodland. But they aren't making the best use of it, despite the fact that we have good markets for home-grown timber. We can sell thousands of fence posts in northern Indiana. The farm forestry committee is working with Mr. DeYoung, the farm forester, in developing this outlet."

Mr. Sample explained that a large amount of grain is trucked into Kentucky, and as the empty trucks go north through Madison they are anxious to haul freight of any kind. Already, he claimed, they have assisted farmers to market posts in that way. The farm forester contacts the

trucks and supplies the trucker and farmer with marketing information.

"We have another job in mind, too," he said. "There is a big demand for fuelwood, particularly high-grade wood, in Cincinnati and Louisville. We plan to work out a scheme with the farmers co-operating in farm forestry work to pool their fuelwood on the banks of the river here at Madison."

By pooling a large quantity, he explained, they would be able to grade it and get better prices. Then the wood would be barged directly to the larger cities along the Ohio River.

"Our farmers are interested in taking good care of their woods," he continued,

ANNUAL MEETING SPECIAL

Unusual Transcontinental Trip Being Planned for Those Attending First Conference on West Coast

YOUR Association is arranging a personally conducted trip to the Los Angeles Meeting, to be held April 15, 16, 17, which will include special stop-overs in the colorful Southwest. Our Los Angeles hosts are arranging a meeting which will long be remembered and Mr. W. S. Rosecrans, president of the Association, describes in his article on page 58 of this issue, many of the points of interest.

Members and friends of the Association will gather in Chicago and through the cooperation of the United States Forest Service and the National Park Service, will enjoy en route special features not otherwise available.

A stop-over will be made at Santa Fe, New Mexico, for a visit to this quaint old city and its colorful Indian country roundabout.

Buses will then take the party to Albuquerque where members of the U. S. Forest Service will serve as hosts after which the Transcontinental Train will be picked up for an overnight ride to Grand Canyon National Park. No description of this incredible work of Nature is necessary and even though many members and friends of the Association have previously visited the Canyon's South Rim, this day will prove exceptionally interesting.

Railroad rates may be reduced in proportion to the number of members and their friends joining the Association's party. However, the approximate round-trip cost from Chicago to Los Angeles, including the special stop-over at Santa Fe, and Grand Canyon, is \$98.80 plus \$19.70 Pullman each way. From New York City, \$148.25 Round Trip, plus \$26.00 Pullman each way. Members of the party may return via the Santa Fe or any other Transcontinental Railroad they desire.

This West Coast Conference promises to be the most interesting in the history of the Association. The various committees handling arrangements in Los Angeles are planning an exceptional program of speakers, together with unusual entertainment.

Headquarters will be at the Ambassador Hotel and special convention rates on the European Plan have been established as follows:—

\$4.00 per day, per person, two in a room with bath, individual beds.

\$4.00 per day, per person, three in two connecting rooms with bath, individual beds.

\$3.50 per day, per person, four persons in two connecting rooms with bath, individual beds.

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\$6.00 per day, room and bath, single occupancy.

(Lower rates are available at hotels close to the Ambassador)

Reservations may be made direct to the Hotel or by writing to the Association.

May we suggest you write us now regarding this special tour to the Association's Meeting? We will then see that you receive complete details.

THE AMERICAN FORESTRY ASSOCIATION
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WASHINGTON, D. C.

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"but they need help to market small quantities of logs, posts, and fuel. One big thing we can do through farm forestry is to help farmers know what they have in their woods, and how to cut it into sizes to bring the best prices."

People in Ripley County, in the northern part of the project, are interested in conservation too, and have taken definite steps for the best use of their land. Here again farmers and business men are working together for the common purpose of community welfare. Guy Harris, county agricultural agent, explained that he served only in an advisory capacity to the Ripley County land use planning committee.

"These people," he said, "know their community and what it needs. We've only started, but we think we are on the right track. Our farmers recognize the need for good use of land on every field as well as on every farm in the county—that's why we're interested in farm forestry. What's good for the land is good for the community."

It is evident that the people of Indiana recognize the role productive farm woodland can play in the development of better land use and the permanent welfare of the community and state. It is reasonable to expect that Indiana's 3,000,000 acres of farm woodland will share an even more important place in the coming years as a result of the cooperative effort of communities and conservation agencies. Surely other counties will profit by the experience of farmers in Jefferson and Ripley counties and wish to share in this venture for the betterment of their land.

Following in Indiana's footsteps, thirty-two other states have developed cooperative programs, bringing the total number of farm forestry projects in the nation to forty-four. These are just a beginning, but the way has been opened for further progress on farm forestry problems.

Tree planting stock is becoming more readily available to farmers at lower production costs and they are learning to plant their rough and eroding land to a useful woodland crop. Methods for marketing more profitably and utilizing more completely are under trial and promise to provide a means of greater encouragement for good woodland management practices. Through united action and a cooperative approach, land owners and government agencies are looking toward the solution of problems heretofore seemingly insurmountable by individual initiative. But in the end the degree of success in this great land use program will depend largely on how more than 6,000,000 farmers respond to the need for building and maintaining a sustained woodland crop and soil protector on 185,000,000 acres of the nation's farm land. On them rests the responsibility. Local, state, and federal conservation agencies can only help them to help themselves. Farmers in Jefferson and Ripley counties seem to have accepted that responsibility and are well on their way toward better communities as their part of a national step in land conservation and better use of forest resources.

WHO'S WHO **Among the Authors in This Issue**

W. T. COX (*The Fight for the Woodland Caribou*), of Minnesota, is attached to the Soil Conservation Service in the Lake States Region and is one of the best known of our American foresters.

W. S. ROSECRANS (*On To Los Angeles*)—prominent in conservation affairs on the West Coast—the newly elected president of The American Forestry Association, is introduced on page 52 and in the Editor's Log in this issue.

L. F. LIVINGSTON (*Wonder World In A Woodpile*), chemical and agricultural engineer, manager of the important agricultural engineering extension work of the Du Pont Company, is a director of The American Forestry Association.



M. E. Musgrave

M. E. MUSGRAVE (*Miracle Worker of the Rangeland*) writes generally—but with particular interest of this individual example—of the rehabilitation of the Western range with deep knowledge, for he is the principal soil conservationist of the Soil Conservation Service at Albuquerque, New Mexico.

WESTON DONEHOWER (*A New Venture In Farm Forestry*), a native of Minnesota, took his A.B. degree in forestry from Minnesota and his M.A. degree from Cornell. He is attached to the Washington office of the Soil Conservation Service.

MYRTLE J. BROLEY (*Banding Eagles in Florida*) a Canadian, is a naturalist eager to record in writing her interesting experiences. Her work appears in Canadian, English and United States publications. Her marriage stimulated her activity as a naturalist for her husband is one of the best known ornithologists in Western Canada. They live at Delta, Ontario.



Myrtle J. Broley

R. V. REYNOLDS (*Under the East Rim*) has been attached as an economic expert to the Washington office of the Forest Service for many years.

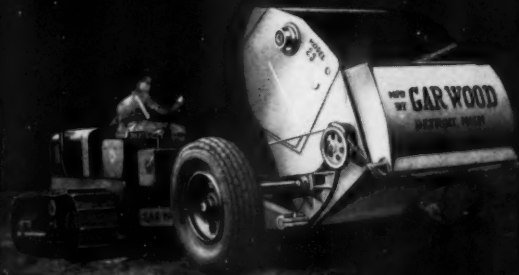
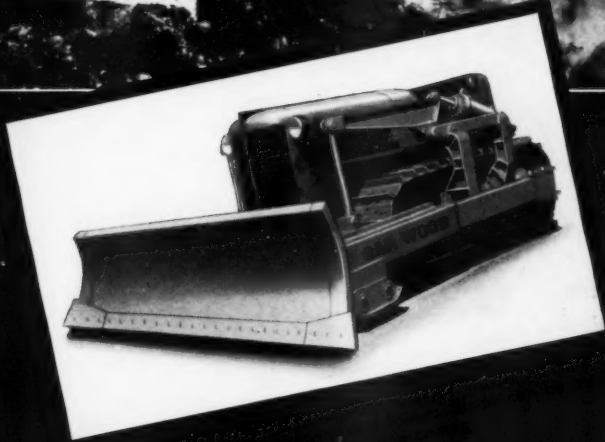
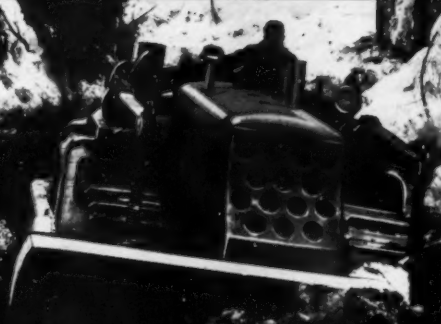
LESTER H. HARTWIG (*Trees Don't Stand Still*) reared as a farm boy in Minnesota, put himself through the agricultural course at the University and finished his forest work in 1935. He has since been engaged in field and editorial work.

ARTHUR B. WILLIAMS (*Planning Before Planting*) is curator of education at the Cleveland Museum of Natural History at Cleveland, Ohio.

THE COVER—Cow Camp in Winter." Photograph by Charles J. Belden.

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